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The whole forming two large annual volumes of concentrated practical information in MEDICINE, SURGERY, MIDWIFERY, PHARMACY, &c.

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No. LXIII.

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OCTOBER 1, 1839, TO JANUARY 1, 1840.

MEDICO CHIRURGICAL TRANSACTIONS. PUBLISHED BY THE ROYAL MEDICAL AND CHIRURGICAL SOCIETY OF LONDON. Second Series, Volume the Fourth. Octavo, pp. 344, Seven Plates, London, 1839.

THE Volume before us contains twenty-three Communications, most of them possessed of considerable interest. They are as follows :

1. Cases of spasmodic disease accompanying affections of the pericardium ; by Richard Bright, M. D. F. R. S. physician extraordinary to the Queen, &c. 2. Case of malignant disease occupying one half of the tongue, to which a ligature was applied from beneath the jaw ; by James M. Arnott, surgeon to the Middlesex Hospital.—3. Memoir on tuphlo-enteritis ; or inflammation and perforative ulceration of the cæcum, and of the appendix vermiformis cæci ; by John Burne, M. D. physician to the Westminster Hospital, lecturer on the practice of medicine, &c.—4. Case of carditis ; by Thomas Salter, Esq, F. R. S. of Poole.—5. Notices of the effects of lead upon the system ; by James Alderson, M. A. and M. D. physician to the Hull General Infirmary.—6, Notices of the occurrences at the Small-pox Hospital, London, during the year 1838 ; by George Gregory, M.D physician to the Small-pox Hospital ; communicated by James M. Arnott, Esq.—7, Case of fracture of the coracoid process of the scapula, with partial dislocation of the humerus forwards, &c. ; by John F. South, assistant-surgeon to St. Thomas's Hospital.—8, Statistical account of cholera in the Seamen's Hospital, in 1832 ; by George Budd, M. D. F. R. S. physician to the Seamen's Hospital. —9. Case of aneurismal tumor in the orbit, cured by tying the common carotid artery ; by George Busk, surgeon to the Seamen's Hospital, Dreadnought.—10, On the softening of the coagulated fibrine ; by George Gulliver, F. R. S. assistant-surgeon of the Royal Regiment of Horse Guards ; communicated by Sir James M'Grigor, Bart.—11, Contributions to the pathology of the spinal cord ; by William Budd, M.D., communicated by John G. Perry, Esq.—12, Memoirs on some principles of pathology in the nervous system ; by Marshall Hall, M.D F.R.S L. and E. &c.—13, Case of enlargement from melanoid tumor of the prostate gland, in a child of five years of age ; by R. A. Stafford, surgeon to the Marylebone Infirmary.—14, Case of congenital absence of the pericardium ; by T. B. Curling, assistant-surgeon to the London Hospital, &c.—15, On a peculiar form of congenital tumor

of the neck; by Cæsar Hawkins, surgeon to St. George's Hospital.—16, Cases of measles occurring oftener than once in the same individuals; by John Webster, M.D. consulting physician to the St. George's and St. James's Dispensary.—17, Remarkable case of dry gangrene occurring in a child three years and seven months old; by Samuel Solly, F. R. S. lecturer on anatomy and physiology, and lecturer on comparative anatomy, at St. Thomas's Hospital.—18, Statistical notices of one hundred and twenty cases of carcinoma uteri, with remarks; by J. C. W. Lever, Esq. communicated by Dr. Clendinning.—19, Case of a girl who voided from the urethra a number of entozootic worms, not hitherto described, with an account of the animals; by T. B. Curling, assistant-surgeon to the London Hospital. —20, Remarks on the acute form of anasareous tumor of the scrotum; by R. Liston, surgeon to the North London Hospital.—21, An account of a fœtus of seven months, with its placenta partially adherent to a nævus occupying the scalp and dura mater; by Robert Lee, M. D. F. R. S. physician to the British Lying-in Hospital, and lecturer on midwifery at St. George's Hospital.—22, On the structure, physiology, and pathology of the persistent capsular investments and pulp of the tooth; by Alex. Nasmyth, M. R. C. S. —23, On the structure of the corpus luteum; by Robert Lee, M. D. F. R. S., &c.

The bill of fare is not so bad. We shall select first the plain and practical dishes.

1.—Cases of Spasmodic Disease, accompanying Affections of the Pericardium. By Richard Bright, M. D. F. R. S.

Dr. Bright relates three cases.

Case 1.—Dr. B. met Mr. Girdwood in consultation, and Dr. Sims on the 5th of April, 1836, on the case of a young man, seventeen years of age, who, about twelve days previously, had begun to complain of general rheumatic symptoms; pains in the limbs, with puffiness and swelling of the wrists, and some other joints, but the symptoms were not strictly those of acute inflammatory rheumatism.

"When all this was rather subsiding, about six days before I was called, peculiar spasmodic symptoms were said to have arisen, which had increased up to the time at which I first saw him, when I found him labouring under the most fully marked symptoms of severe chorea, except that the convulsion was more violent than is almost ever seen in chorea. His head was constantly thrown from one side of the bed to the other. His lips were closed, and opened with a smacking sound, and when desired to put out his tongue it was protruded with all the forced grimace and difficulty observed in chorea. The pulse was weak and varied from 108 to 120, and there was an occasional sharpness followed by a feebleness and a variation in the beat, which induced us to pay attention to the action of the heart, but led to suspicions, rather than conviction, of that organ being more than functionally implicated in the disease; for we found in the excessive convulsion of the whole muscular system, sufficient to account for a great deal of the disturbance which there was in the circulation, and in the heart's action in particular.

For two or three days our remedies appeared to alleviate his symptoms, so

that for a day or two it was not considered necessary to meet in consultation; but the relief was very temporary. The chorea became more severe, and the spasms put on the character of the most violent convulsions. There was likewise some wandering of mind, his apparent incoherence being however certainly increased by the convulsions and contortions of his mouth, which rendered his utterance difficult and his words indistinct. His condition after this became such that some degree of personal restraint was absolutely necessary, and I found that this had been adopted when I renewed my visit. The swellings at the wrist and on one hand again increased; he grew worse; and on the 15th, being about the sixteenth day after the first spasmodic symptoms, he died." 4.

Dissection.—The heart was found adhering to the free pericardium, by the most profuse effusion of firm semitransparent gelatinous fibrin. This was particularly the case about the base of the heart, while towards the apex the effusion was rather an opake serum. The substance of the heart was red, and the semilunar and mitral valves had each a fringe of vegetations, doubtless rather recent, forming a raised irregular line along the auricular side of the mitral, and along the aortal side of the semilunar valve. The lining membrane of the membranous portion of the auricle seemed to have a thin false membrane upon it. The edges of the lung which lay on the pericardium were slightly adherent to that membrane by inflammation. The brain and the abdominal viscera were most carefully and minutely examined, and all found perfectly healthy.

Case 2.—On the 1st of June, 1838, a gentleman, after exposure to cold, was seized with pain in the right side, and swelling, apparently rheumatic, of several of the joints. On the 5th, he sent for Mr. Balderson, who found him labouring under severe pain of the right side passing upwards to the shoulder, with a full pulse. He immediately bled him freely from the arm, and the blood was moderately buffed. The following morning venesection was repeated, on account of the continued difficulty of breathing, and the inability to lie down in bed; but the shortness of breathing seemed to increase, the pulse became quick and irregular, and often indistinct, and he complained towards the evening that he had a difficulty in swallowing. At eleven p. m. Dr. Bright saw him.

"This last symptom was so distressing, accompanied with so much difficulty in opening the mouth, that I was led to inquire very particularly, whether he had received any prick or wound which might be producing tetanus, spasm, or trismus, but I could discover nothing except a blow and cut received nearly six months before over his left eye brow, but which had healed without difficulty, or subsequent ill consequences. I saw him swallow, although with much effort, and with a kind of convulsive catch. I found his heart running on very fast, and acting spasmodically, but could discover neither rubbing sound, nor any bruit. He had no cough, and at that time I detected no pneumonic crepitation in the lungs; the skin perspired very freely." 6.

It was concluded that rheumatic inflammation had affected the diaphragm, and probably the pericardium: and the prescription consisted of calomel, antimony and opium, mustard poultices to the chest, and purgatives.

"About two a. m. Mr. Balderson was called up to see him, on account of the rapid increase of the tetanic symptoms, and found that he had only been able to

take one pill and one of the purgative draughts, and now his teeth were completely closed. At 9 a. m. I again saw him, and found him propped up in bed. The anxiety of countenance was excessive; the state of trismus was complete; so that it was impossible to get anything into his mouth, and his deglutition so completely interrupted that he was unable to swallow his saliva, and it was with the greatest difficulty he could get rid of it as it collected in his mouth. There were likewise some slight indications of opisthotonous and spasmodic action of the muscles of the back. His bowels had been twice relieved; his pulse was very rapid, often quite indistinct. We ascertained distinctly that there was some pleuritic effusion, with a rubbing sound, and likewise some pneumonic crepitation at the lowest part of the left lung." 7.

Blisters, mercurial ointment, opium suppositories, &c. were determined on, but by 2, p. m. there had been no relaxation of the spasm, and he had experienced two convulsive seizures. A third occurred during Dr. B.'s visit. It was quite epileptic in its character, and the countenance became purple and suffused—the eyes strained—the whole body convulsed. His pulse was very feeble, and his skin bathed in a most profuse perspiration. He was quite aware of his situation, though he rambled occasionally. He suffered three more distinct epileptic attacks, and died at 5 o'clock P. M. within twenty hours of the first appearance of the symptoms of dysphagia, on which the trismus and convulsions had rapidly followed.

Dissection.—There were traces of inflammation at the lower edge of the right and left lung. The lower half of the right pleura, as it covers the ribs and extends over the whole diaphragm, was highly inflamed, and covered with a thin coating of fibrin. The inflammation was, however, still more marked as it ran up towards the root of the lung and covered the right side of the pericardium, where the phrenic nerve was seen winding its way down the membrane in the midst of the most intense indications of inflammation, and as it ran over the diaphragm was covered with shreds of recent false membrane. The left pleura was also inflamed, and a chamber was formed at the lower part just where the diaphragm forms an angle, containing about half an ounce of straw-coloured serum intersected by bridles of recent lymph.

"The two cases," says our able author, "which I have now related, are full of matter for interesting consideration, and in a practical point of view afford examples of the combination of inflammatory affections with convulsive symptoms, capable of masking each other in a manner which it is most important to bear in mind. In the former of these cases the inflammation of the pericardium was but darkly conjectured even to the last. In the latter case the inflammation of the pleura and diaphragm was much more early predicated, and yet the obscure story of a cut upon the forehead six months before had its weight on our minds in a case so exactly resembling traumatic trismus, and probably in some degree paralysed the desire for more large depletion; from which, however, I do not believe any benefit would have resulted, considering the complete relaxation of the pores of the skin, and the state of prostration to which the pulse was already reduced by the two previous bleedings At the same time, when we find on examination the results of intense inflammatory action, it is not possible to feel confident that bleeding, even in the very advanced stages, might not have been serviceable. Had the state of the patient been such as to permit of the regular administration of medicine by the mouth, I have great confidence in the effect which calomel, antimony, and opium would have produced; and this combination is, perhaps, a more appropriate remedy than large bleeding

under such circumstances; but whatever the remedy we may feel inclined to adopt to overcome the disease, the great and important point is to impress upon our minds the fact, that the most violent attacks of spasmodic disease will occasionally owe their existence to inflammation of that portion of the pleura and the pericardium, where inflammation is often with difficulty detected—that part more particularly where the phrenic nerve in its course or its distribution is to be found." 10.

We would observe that the apparent prostration in such a case as the last does not seem to be an efficient reason against active depletory measures. These latter are no doubt useless or worse where actual disorganization has occurred in an important part. If there is a chance under such circumstances, it is from the reparative powers of the system, powers which violent measures would impair. But where the main lesion is a limited pleurisy, prostration must be rather the effect of the intensity of the inflammation on the system, and what relieves the inflammation must, consideratis considerandis, mitigate the prostration. All practical physicians will, however, allow, that cases of this description are much clearer after their issue than in their course, and perhaps there are few where the most observant men are more apt to be misled.

Dr. Bright, after quoting some opinions on the occasional connexion between chorea and rheumatism, observes that he has seen many cases of their combination and alternation, and some that convince him of the dependence now and then of the former on inflammation of the pericardium. We may mention the particulars of one.

Case.—Dr. B., about twelve years ago, saw a young lady, in consultation with Dr. Lister. The catamenia had been irregular, and she had suffered from rheumatic affections of the joints, though not in the genuine form of severe rheumatitis; several of the joints were puffy, slightly inflamed, aching and tender; and she had now begun to show symptoms of involuntary motion—the movements and actions, in fact, of complete chorea. The heart was agitated, and to it the chief uneasiness was referred; the pulse was hurried and irregular; on listening to the heart a "frottement" was distinctly heard. No doubt was entertained of the existence of an inflamed state of the pericardium. Remedies were applied, both local and general, under this impression, and the lady recovered completely, and is now living, the happy mother of a family.

And, after detailing several other cases, Dr. Bright adds:—

"Though I doubt not that in some cases the coverings of the cerebro-spinal mass may be, and are, implicated, yet I believe that the much more frequent cause of chorea, in conjunction with rheumatism, is the inflammation of the pericardium, and that the irritation is communicated thence, probably to the spine, just as the irritation of other parts, as of the bowels, the gums, or the uterus is communicated, and produces the same diseases; for I do not at all incline to the belief, that inflammation, in or about the spine, is necessary to induce chorea." 15.

The next case related by Dr. Bright is given with a very different view, with that, namely, of shewing, how symptoms may arise in chronic disease when the pericardium becomes implicated, which may give a peculiar aspect to the case, and embarrass the diagnosis.

Case 3.—A young lady, aged 17, three months prior to Dr. Bright's visit, had first begun to complain of a pain in the right foot and knee, and then in the groin, and extending up the side, so that it was supposed that the liver might be in fault, and slight mercurial action was induced; after this the pain became less, and a fulness in the iliac region and the groin seemed to diminish. Three weeks before Dr. B. saw her, some of the inguinal glands enlarged, and since that, some of the glands of the neck and under the left ankle; and for the last ten days a very hard swelling had taken place near the tuberosity of the ischium on the right side. It was quite plain that very extensive glandular disease was taking place; and although she had already lost one of her sisters of phthisis, as it was supposed, yet the general diffusion of the disease, without any pulmonary symptoms, seemed to render it probable that this was even more serious than simple tubercular disease. The country and sarsaparilla were prescribed.

"She was removed to Brixton, but I was again requested to see her on the 19th of June; all her symptoms having been increasing, and, in addition to the rest, she had become the subject of the most alarming attacks of dispnœa, coming on generally in the middle of the night with agitation and shaking, and apparent convulsion of the diaphragm threatening death, and resembling an aggravated form of hysteric convulsion. I could now feel an abdominal hardness like a tuberculated omentum, and there were now to be discovered a string of small very hard glands, tender to the touch, running along the back on the left of the spine, near the lower dorsal vertebræ.

I saw her occasionally after this: the attacks of dyspnœa and convulsion returned frequently at night, and assisted in wearing her out gradually, and she sunk upon the 9th of July." 17.

Dissection.—The body, writes our author, was greatly emaciated. There were some subcutaneous tumors on the chest and abdomen. They were small, oval, flat, and some of them were softening at their centres.

Chest and lungs quite free from all tubercular deposit. The surface of the right lung had upon it several small, hard, malignant deposits, which, in one part, formed a fringe round the edge of the lung. The heart and pericardium formed a hard mass, firmly glued to the sternum by the white fungoid matter deposited in the anterior mediastinum, so that on raising the bone they were round like a hard tumor attached within.

The heart itself presented a curious specimen of disease: a thick layer of yellow malignant matter lined and covered the pericardium, both the portion attached to the heart and the reflected portion; the two deposits were strongly glued together in most parts, and were a quarter of an inch in thickness. In other parts the two layers were easily torn from each other. The phrenic nerve was seen on the right side passing down, pressed upon, and almost embedded in this diseased mass.

The iliac, lumbar, and mesenteric glands were similarly diseased—as were the ovaries, and the broad ligaments.

Dr. Bright thinks there can be no doubt that the peculiar and very alarming train of symptoms which assisted in wearing out this patient, depended on the condition of the heart and pericardium, and the nature of the attacks would render it probable that the phrenic nerve was more particularly implicated in the irritation produced.

An interesting paper.

II. On A Peculiar Form of Congenital Tumor of the Neck. By Cæsar Hawkins, Surgeon to St. George's Hospital.

Mr. Hawkins, whose exertions to improve our acquaintance with the morbid growths are so well known and so successful, has communicated an instructive paper on this subject. After noticing the more familiar forms of encysted tumors, he proceeds to describe one of which he believes that no published account can be found. It is a form of congenital tumor, which is composed of many cysts joined together, in which the proportion of organized matter is so considerable, as to give a more solid character to the tumor, and make it deserve the name of cystic tumor, as much as the apparently analogous cases of cystic sarcoma, occasionally found in the breast, testis, or ovary of adults.

He presents two cases as fair samples of the affection.

Case 1.—A child about eight months old was taken to Mr. Hawkins by Mr. Julius, of Richmond, on account of a large tumor on the right side of the neck, which was of the size of a small orange at its birth, and had gradually increased since that time. The tumor now reached from the zygoma to the cricoid cartilage, and from the mastoid process to the chin; it projected outward about three inches, so as to make the side of the face and neck appear nearly twice as large as the opposite side; and it extended also below the jaw, into the mouth, so as to push the tongue considerably to the opposite side and upwards. But although it caused much unsightliness, it appeared to occasion no pain nor inconvenience, and the child was quite healthy.

The skin was unaltered, and unattached to the tumor, and had much fat below it, and the outline of the tumor was smooth and uniform to the eye; on feeling it carefully, however, it was evident that there were several globular irregularities, some of which were of hard consistence, as if solid, and possibly glandular, but four others in the parotid and submaxillary glands appeared to contain fluid, which was the more probable, as two other cysts were perceptible below the tongue, transparent, like ranulæ, but containing a dark red fluid.

The cysts were punctured from time to time, as they refilled, and the same plan was pursued with several other cysts, which came forward as those first observed were obliterated; each cyst contained from a drachm to half an ounce of liquid, the contents of some being nearly clear water, with very little trace of mucus or albumen, but the secretion of others being of a darker colour, with more coagulable matter, so as to resemble melted currant jelly. Friction was also employed, with hydriodate of potash ointment in the intervals of the punctures.

This treatment was continued for about a year, when the disposition to secrete fluid appeared to be subdued, and the swelling was about a third of its original size, and what remained felt and looked like a loose pendulous bag of fat and skin, with two or three solid lumps, like glands, below. The child has been removed from Richmond for several years, but, when Mr. Julius last saw it, no tumor remained.

Case 2.—"The appearance of the tumor in this case was more complicated than in the next which I will mention, which Mr. Palmer attended, at the St. George's and St. James's Dispensary, and which he requested me to look at. The tumor was in this instance, about the size of an orange, and was soft and elastic, moveable, and nearly pendulous, from its weight, and was situated in the same place as in the last case, in front of the ear, and below the jaw. It gave no pain nor inconvenience, and had scarcely increased in size since the birth of the child, who was now about a year old. The skin, as in the other case, was unattached, and had much fat below it, and there had been, I believe, some thoughts of removing the disease as a common adipose tumour. There were in it, however, several round bodies, two of which appeared to contain fluid, but the nature of the others was more doubtful. One of these, at the margin of the parotid gland, contained three drachms of clear liquid, but the other being punctured, no fluid escaped through the needle. With the final result of the case, I am not acquainted, as the child was not brought many times to the Dispensary."

The next case is brought forward by Mr. Hawkins, as eminently illustrative of the nature of these cases.

Case 3.—A child, eleven weeks old, was sent to Mr. Hawkins with a tumor in the neck. It was emaciated to the last degree, as, in fact, it had scarcely digested any food from its birth, almost every thing that was swallowed, or attempted to be swallowed, being nearly directly vomited again: it had also scarcely slept since its birth, as, whenever laid down in the horizontal position, it was instantly roused from slumber by impending suffocation; whatever rest it did obtain was therefore procured while held nearly upright in the arms. Notwithstanding this, however, it did not cry or breathe, when awake, as if there was any constant pressure about the glottis, nor was the tumor in the neck so tense as to account for the symptoms, unless some portion was intricately connected with the larynx and œsophagus, independently of the general tenseness of the whole tumor;—which did not appear very probable, from the facility with which respiration was ordinarily performed. On the right side of the neck was a tumor, the prominent part of which was of the size of a large orange, and which reached from the zygoma nearly to the clavicle, and from the ear to the chin, across the upper part. It was soft and elastic, and the skin was healthy and unattached, and it seemed to be quite free from pain or tenderness.

Below the jaw, Mr. H. could detect three or four small cysts of fluid, and one or two smaller, and apparently solid bodies, like glands; but the greater part of the tumor in front of the ear did not fluctuate, nor present any irregularity of surface, but was soft and elastic, and compressible, like a subcutaneous nævus, which disease it resembled, also, in becoming more tense and prominent from crying or struggling, and below the mucous membrane of the mouth were several varicose vessels, like those observed sometimes in the neighborhood of blood-vessel tumors.

The child died a few days afterwards, suffocated suddenly.

Dissection.—"When the thin skin covering the tumour was turned back, it appeared to be of the size of two oranges, separated by a deep sulcus, which was formed by the tendon of the digastricus muscle, which being much pushed forwards by the tumor, must have had its actions in connection with the

larynx and pharynx much interfered with. The disease was now seen to be composed of a great number of small cysts, many hundreds probably, varying in size from a pea to a walnut, closely joined together, and composed of delicate membranes, like very fine peritoneum, but in some parts covered by fibrous structure, giving the cysts the appearance of thin pericardium, and very few of them were so far insulated as to admit of being dissected out without cutting through others. The fluid in most of the cysts was transparent, with scarcely any trace of coagulable matter, but in others the contents were of every shade of red, even as dark as venous blood, but without any coagulum, and evidently only coloured secretion.

The softness and elasticity of the prominent part of the tumour, arose from most of the cysts in that situation being flaccid, and only half filled; in other parts single cysts were so tense as to be quite unyielding, as if solid, and a feeling of solidity was also given by a few cysts being more closely joined together than those by their side; and in one or two parts a tense cyst projected into another in a flaccid state, so as also to feel like a solid body; although the only really solid bodies were two or three small absorbent glands mixed with the cysts. The portion of the tumour in front of the ear was covered by a thin layer of condensed parotid gland, another part of which, in a healthy state, lay behind the cysts, through the middle of which ran the portio dura, and external carotid artery. The submaxillary gland was pushed out by other cysts, so as to be loose below the skin, and all the vessels and nerves at the base of the jaw were surrounded by some of the cysts, and curiously twisted in their course.

On dissecting deeper, the cysts were found to extend along the front of the spine, behind the pharynx and œsophagus, some being as high as the basilar process, and some as low as the sixth cervical vertebra; and along the whole length of the neck the cysts surrounded the carotid artery, jugular vein, and nervus vagus, which were even separated from one another by some cysts formed in their sheath. None of these bodies were very closely united to the œsophagus and pharynx, and there seemed to be nothing morbid about the glottis, except a slight thickening of the mucous membrane." 239.

Mr. Hawkins makes some remarks on diagnosis:—

"It is evident from this account, that the numerous cysts which compose the tumour are formed in the common cellular tissue; each separate cyst, it is to be presumed, being like the single serous encysted tumour met with in many parts of the body, at every age; why such numbers should be formed at once before birth, does not appear, unless it arise from the peculiarly lax and watery nature of the cellular membrane in the fœtus, especially, perhaps, in the neck, where I believe such a tumour to be more common than elsewhere.

The number of cysts existing in the tumour, and the different degrees of consistence of the whole or of separate parts in different cases, arising, as the dissection demonstrates, from the size and state of tension, and relative position of individual cysts, make the diagnosis of the tumour somewhat obscure. When numerous and full of liquid, and small in size, they feel like enlarged glands, or other solid globular bodies; when numerous and only half filled, they become soft and compressible; but in both these cases the existence of fluid is difficult to be detected in comparison with those cases in which only a few larger cysts exist.

The resemblance to fatty tumours is considerable, and the deception is assisted by the quantity of fat generally situated beneath the skin, and filling up the inequalities of the surface of the tumour. They are also much like a subcutaneous nævus, which is so often developed in the same situation, when the cysts are half filled; in the fatal case I have related, the softness and compressibility of part of the tumour, its increase from exertion, and the varicose vessels within the cheek and mouth, made me think it probable that some part of the tumour

was composed of blood vessels, though the nature of the remainder was clearly perceptible. In each case that I have seen, however, the existence of globular bodies in some of which fluid was perceptible, distinguished the tumour from every other kind likely to be formed in infancy." 41.

We naturally inquire what treatment may seem most likely to succeed.

Excision may appear easy, but would probably be difficult if not impossible. We may refer to the dissection already given, and we may refer also to a case of Mr. Arnott's in which that gentleman operated. The tumour, indeed, was situated in a more favourable spot, behind the sterno-mastoid muscle. A single cyst was opened first, when the infant was a month old, and repeated once more, and when five months old this was laid open in order to remove what appeared to be a solid body, but which was found to be composed of a multitude of small cysts, as in the cases previously narrated. The tumour was followed under the sterno-mastoid muscle and carotid artery, and behind the pharynx, and its total excision being found impossible, a ligature was tied round the deeper part. The child ultimately did well, but the ligature was not entirely thrown off for three months, during which time repeated attacks of erysipelas occurred.

The result of Mr. Hawkins' observations on the subject of treatment may be thus set forth:—

1. The cysts may be emptied, from time to time, by a grooved needle, so that there is no scar whatever; or by a lancet, when they are situated in the mouth; the punctures heal directly, and the emptying the larger cysts appears to assist the action of other remedies upon the cysts themselves.

2. Pressure may be employed, especially after the evacuation of the fluid, in some situations, as in front of the ear, although, of course, this means is generally inapplicable, on account of its obvious interference with respiration, mastication, and deglutition.

3. Stimulant applications may be constantly employed, of such a strength as to excite moderate inflammation, but stopping short of suppuration, in order to avoid deformity; to avoid which Mr. Hawkins has directed their intermission for a short time after the punctures.

"The cysts do not appear, however, much disposed to inflammation, beyond the degree necessary for their obliteration and absorption, after the fluid has been got rid of. The applications I have made use of have been the ointment of hydriodate of potassa, rubbed on by the hand; a solution of a drachm of iodine and two scruples of hydriodate of potassa in an ounce of water, painted over the tumour by means of a camel's hair brush; a lotion, of half an ounce of Goulard with two ounces of spirit, and six of camphor mixture, applied by means of folded linen; or one composed of from one to two drachms of muriate of ammonia, mixed with two ounces of vinegar and spirits of wine, with eight or ten of water." 243.

We have found the tincture of iodine, repeatedly applied with a brush, a good application, where such local means are wanted. It produces continued desquamation of the cuticle, and does not occasion permanent discoloration.

Mr. Hawkins observes that this method of treatment must needs be tedious, hence he has seldom seen cases to the end.

His readers must feel obliged to Mr. Hawkins for this useful communication.

III NOTICES OF THE EFFECTS OF LEAD UPON THE SYSTEM. By JAMES ALDERSON, M. A. and M. D. Physician to the Hull General Infirmary, &c.

Dr. Alderson has seen two cases in which paralysis of the nerves of vision resulted from exposure to the influence of lead. Acting on the hint afforded by the use of splints for paralysis of the extensor muscles of the fore-arm, Dr. Alderson excluded light from the paralysed eyes in these cases, and with the happiest effect.

Case 1.—Dec. 27, 1833.—Elizabeth Clayton, aged 25 years, single woman, was admitted into the Hull General Infirmary. States that she has worked for seven or eight years in the lead works, and has never before been attacked with paralysis. She first perceived the approach of paralysis about six weeks ago. The hands were the first to loose their power; after about three weeks her eyesight began to be defective. The sight is at this time completely lost. The pupils are somewhat dilated. Her legs are also affected with paralysis, but she scarcely knows how or when they became affected. She states that she has done all sorts of work in the lead works, but is of opinion that what is called "picking," is the most deleterious. The girls of the works are employed on this duty every other week only.

Dr. Alderson gives us, in a note, the following account of "picking."

When lead, in its blue metallic form, is first placed in the earthen pots, it is rolled up or cast in forms, and placed over vinegar; it then remains for some time, (six or eight weeks,) embedded in manure and bark, which keeps it at a proper temperature for the action of the vapour of the vinegar upon metal. When first opened out for work or separation, there arises a heated vapour, which is thought by those employed in the works to be very pernicious. The pots are then taken out of the beds and carried to a table, to be "picked over." The lead is then unrolled, or passed between rollers and crushed, to force off the encrusted carbonate, or white lead of commerce. That which is white is separated from the metallic part, and it is this separation, or "picking," as it is called, which is found to be so pernicious. During the mechanical separation, by crushing, the finer portions of the carbonate will be suspended in the atmosphere, and breathed by the girls whilst employed in the work.

The following medicines were ordered for the patient. A drachm of sulphate of magnesia, with two minims of laudanum, in an ounce of the compound of infusion of roses, every four hours. Ten grains of the compound ipecacuanha powder at bed time, and a stimulating liniment to the neck and spine, and a generous diet.

She was in the house three weeks on this plan, without any improvement in the vision, though during this time her other paralytic symptoms were perceptibly improving. With a view to take off the stimulus of light from the nerves of vision, a bandage was then directed to be applied over the eyes, so as to exclude the light altogether. The bandage to be worn day and night.

By the 18th of February she could read large print and was made an out-patient, soon after which she was discharged from the hospital perfectly cured.

Case 2.—On June 10, 1835, Elizabeth Dyson, aged 18 years, was admitted into the Hull General Infirmary, suffering from complete loss of sight, with paralysis of the hands. States that she has worked nine months in the lead works, and has had colic several times; that castor oil was always sufficient in her attacks of colic to remove the complaint.

A bandage, as before, was ordered over the eyes, and to be kept strictly applied, so as to exclude all light; and the same plan of treatment was adopted as in the last case.

June 24th. Some power of vision returning; better in her other paralytic symptoms.

July 8th. Eye-sight quite restored; ordered quinine.

July 15th. Discharged from the hospital cured.

We add the following remarks.

"I may be allowed to add, that several cases of paralysis, without loss of vision, and numerous cases of colic, have also, within the last nine years, fallen under my care, both in the hospital and out of it. Those of paralysis, without colic, I have found, for the most part, hitherto to yield to the compound infusion of roses, with salts and laudanum. Whilst those of acute colic always give way to a steady perseverance in drastic purgatives, assisted by purgative injections.

In the milder cases, the old remedy, calomel, colocynth, and opium, in repeated doses, answers admirably; whilst in the more severe cases, croton oil frequently repeated, until relief be obtained from the bowels, is more efficacious than any other remedy with which I am acquainted. The form and dose which in my experience is found to answer best, is two drops of the oil, with ten grains of magnesia, a drachm of mucilage, and an ounce of cinnamon water, every two or three hours.

I willingly bear testimony to the excellence of this remedy in cases which resist the milder and more common treatment, in overcoming what was formerly supposed to be spasm in the bowel; but which we now believe, reasoning analogically from those parts which we have the means of observing, to arise from paralysis of portions of the intestine.

This state of the intestine, in the more severe cases, requires the most powerful drastics in order to induce the bowel to empty itself of its contents. It may admit of a doubt in what way the effect is produced by drastics, whether as a stimulus to the paralysed part of the intestine, or to the more healthy part of it, by which so much increased action is induced, as to carry the contents of the bowel through and beyond the paralysed part. Certain it is, that the most powerful drastics are required, and are well borne by the patient." 87.

Dr. Alderson adds:

Some Cases of Paralysis from the unsuspected absorption of Lead, in consequence of drinking rain water, kept in lead cisterns.

On the 18th July, 1837, Dr. A. saw, in consultation with Mr. Craven, Mr. Thackray, aged 63.

He was laboring under paralysis of the upper extremities, and partial paralysis of the lower. The hands, with the palms turned inwards hung by his sides, and rather forward, perfectly powerless, rather swollen, and of a livid hue. He had no power of moving the fore-arm, nor of rising from his chair without assistance. When he walked to his bed-room, he required the assistance of a servant on each side of him, and then his knees bent under him, and his gait was tottering. His voice was a good deal altered,

and the control over the tones of the voice much impaired. His countenance was blanched, but not sallow; the functions of the brain, as an organ of intellect, not interfered with. He complained of great pain in the lower part of the body, accompanied by costiveness, and of pain across the legs and arms. He would frequently shed tears from slight causes.

"I learnt from Mr. Craven, that his bowels acted only every three or four days, and then only in consequence of having taken active medicine; that in a former attendance, eighteen months previously to my being called to attend him, Mr. Thackray, had an epilectic seizure. During the fit he fell out of bed, and dislocated the left shoulder, since which period he has not been affected with epilepsy.

The fact, that the sister of Mr. Thackray's late wife, who lived in the house with him, was last year attacked with paralytic symptoms, precisely similar to those of her brother-in-law, excited my attention, as a remarkable coincidence. These had supervened upon a debilitated constitution, which had for some years showed signs of giving way. She died paralytic, without any cause of the paralytic symptoms having been made out.

As there was no relationship by blood between them, it appeared to me more than probable, that some common agent existed as the cause of the symptoms in both.

On inquiry, it was ascertained that the water used by the family, and which was supposed by them to be more pure than any supplied to the town, was rain water, collected from the top of the house by means of lead gutters, and received into a cistern lined with lead. It was filtered for use, and had a sweetish taste, which had often been remarked by the servants. On testing the water in conjunction with Mr. Robert Craven, agreeably to the recommendation of Dr. A. T. Thompson, we obtained distinct evidence of the presence of lead.

It was now deemed advisable by us to call in to our assistance Mr. Pearsall, a most able chemist, to determine the precise condition in which the lead existed, and the proportion contained in the water.

On examining the sides of the cistern, in conjunction with Mr. Pearsall, and scraping them with the nail, the white carbonate of lead was abundantly manifest, especially in the angles of the cistern, where the soldering had, probably by galvanic action, assisted and expedited the change. Efflorescence was here distinctly to be seen.

It was now pretty evident that the source of the paralytic symptoms was lead in the water; and, in consequence, Mr. Thackray was immediately put on a similar plan to the cases which I have already detailed, viz. compound infusion of roses, with sulphate of magnesia and laudanum, and a generous diet allowed, with stimulus in moderation. Subsequently quinine, strychnine, frictions, and electricity.

I am happy to have it in my power to say, that Mr. Thackray is now able to walk almost any distance, to use his arms pretty well, though he has not regained, and probably never will regain, complete power over the wrists and fingers.

He is now able to enjoy life, which was previously becoming a burden to him; and he is very grateful for the providential discovery of lead in the water used by the family, and which is now entirely discarded for culinary purposes.

Many of the usual symptoms were manifested in the servants, but in a minor degree; they have been more or less tormented by colicky pains, and by constipation; but not having resided for any long period subjected to the influence of the water, it was not to be expected that they would be affected with the more chronic symptoms, as paralysis, &c.

It is worthy of notice, that it was always remarked that when Mrs. Martin (Mr. Thackray's sister-in-law) went on a visit into Lincolnshire to her native air, she recovered wonderfully from her paralytic symptoms, and came home much invigorated and restored; but on her return to Hull, the symptoms of paralysis soon returned. The action of lead on the system was not at that time suspected.

This fact accords, however, with our observations on the general action of this poison in the system in those whose pursuits and avocations lead them to handle it or to be amongst it. In painters we witness an aggravation of symptoms on a return to their accustomed employment; even the wearing of unclean apparel has been supposed to re-induce the disease in those who have recently suffered from it." 91.

IV. CASE OF MALIGNANT DISEASE OCCUPYING ONE-HALF OF THE TONGUE, IN WHICH A LIGATURE WAS APPLIED FROM BENEATH THE JAW.

Mr. Arnott observes that when malignant disease of the tongue has extended to its basis, the application of a ligature from the *mouth* has been found impracticable, and the case abandoned as hopeless. But some operations performed by M. Jules Cloquet and M. Mirault have tended to modify this feeling of despair.

Case 1.—In a man who had disease on one side of the tongue, and which could not be removed by incision or the ligature applied through the mouth, M. Cloquet operated thus:—Having made a small incision in the mesial line of the neck above the os hyoides, he passed a curved needle, having an eye at the point and fixed in a handle, through the base of the tongue, and carrying the handle backwards caused the point to project between the teeth. Through the eye two ligatures were passed, and the needle being withdrawn carried the ligature through the tongue. The free part of this organ anterior to the frenum was next divided in its middle, and the needle being reintroduced at the wound in the neck, its point was made to appear in the floor of the mouth just before the frenum. The oral ends of both ligatures were next passed through its eye, and the needle being withdrawn, one of the loops thus formed was disposed longitudinally on the middle of the tongue and in the angle of its division; the other across, so as to surround it on the outer side. Being tied, the cancerous part was included between them. The operation terminated unfavorably, the patient dying in three days.

Case 2.—"In a case of alleged cancerous tumours," continues our author, "with ulceration of the tongue, which M. Mirault met with in a woman, (aged 23,) and which occupied the centre of the organ in almost its entire width, two modes of operating presented themselves to the mind of that gentleman, who was not at the time aware of M Cloquet's case. One of these was to apply two ligatures to the tongue immediately in front of the arch of the palate, in order to intercept the circulation through the part, and to divide it transversely, and then, 'dans un second temps,' to extirpate the anterior portion of tongue, by detaching it with scissors from the floor of the mouth.—The other was to tie both lingual arteries, and having thus guarded against hæmorrhage to extirpate the cancer. M. Mirault determined upon adopting the latter proceeding, but in attempting it, he failed in finding the left lingual artery, though he succeeded

in tying the right. Fifteen days subsequently, in order to control the circulation through the left, he placed a ligature around this half of the tongue, for which purpose he made an incision from about a finger's breadth under the chin to the os hyoides, and by this a needle was carried through the base of the organ into the mouth, out of which he drew the needle: this was again carried into the mouth, and through its floor, directly in front of the arch of the palate on the left side of the tongue, and brought out at the wound under the chin.

The ligature being tightened cut its way through the tongue in nine days, and during this time the tumour sensibly diminished, and the edge of the ulcer became less hard and prominent. To complete the operation nothing now remained but to detach the parts from the floor of the mouth, and to divide the right half of the tongue.

M. Mirault preferred doing this 'en deux temps,' and reversing the order just mentioned, he resolved to effect the division of the right half by means of a ligature, as had already been effected on the left.

Having done so, the beneficial results were so remarkable, that the remaining step of the operation was postponed—then abandoned—in fact, the tumour rapidly decreased, and the ulcer began to heal, so that in twenty-seven days from the last operation, the former was reduced to the size of a nut, and the latter was in great part healed. Two months subsequently the tongue had resumed its natural size, and presented a very dense cicatrix on its surface, but the tumour had entirely disappeared.

At this time the patient could move the tongue freely, could speak so as to be readily understood, and the sense of taste was retained on both sides of the tongue." 32.

Case 3.—Hannah Hayward, fifteen years of age, was admitted into the Middlesex Hospital, on the 8th of May, 1838: the right half of the tongue was occupied by a tumour which projected from its upper and under surface, extended from nearly half an inch of the apex to the isthmus faucium, protruded at the edge between the teeth, and in the mesial aspect overstepped this line, and by compression had considerably reduced the width of the left or sound half of the organ. The bulk and form, generally, of the swelling, were those of a pullet's egg, but with irregular outline. The prevailing colour was purple, in parts, however, yellowish grey, apparently from effusion of lymph underneath the cuticular covering. Posteriorly, the upper surface was covered by warty excrescences: anteriorly, it presented a vesicular appearance, from serous effusion into the papillary structure. The substance of the tumour was firm, solid, and unyielding to compression. Soreness of the part was complained of, and pain was felt in the ear. Trifling bleeding had occasionally taken place from the part, and was readily excited by rough handling, but soon ceased. There was no enlargement of the neighbouring lymphatic glands, and the patient looked well. She had never menstruated.

The disease had begun as a small blue swelling nine years ago, but increased rapidly six weeks previously, after some pills which she had taken for fits. It is unimportant mentioning the remedies employed, as they were useless, and the disease advanced.

"The size of the swelling had now materially increased, filling the concavity of the palate, and the sub-lingual space; it measured 2½ inches in length,—1¼ in breadth,—and 1½ in thickness,—reducing the left half of the tongue to a narrow strip. In the ordinary situation of the parts, the limits of the disease could not

be seen; but by causing the tongue to be protruded, and drawing it forcibly over to the left side, the boundaries of the tumour could be traced by the finger passed along its outer edge, under the arch of the palate, where sound structure could be felt beyond. On the mesial aspect and superior surface the warty excrescences previously mentioned, had so overlapped the left half of the organ as to render it impossible to trace the sulcus naturally existing in this situation. The presence of these growths, and more especially the prominence in this direction of the swelling itself, rendered it more difficult to distinguish the boundaries of the disease on the upper surface posteriorly, which were, however, satisfactorily made out. Inferiorly, in the corresponding situation, this, of course, from the attachment of the parts, could not be done, but from the examination, as far as it could be carried, and the degree of persistent mobility of the organ, it was inferred that the disease did not include the whole of the basis below." 23.

Operation.—This was performed on the 6th of June. The able operator thus narrates it:—

The patient being seated, the head slightly extended, and the os hyoides felt, an incision was made from over it upwards and forwards, an inch and a half in length in the mesial line, through the skin, cellular substance, and raphe, of the mylohyoid muscles. With the edge of the knife, but chiefly by its handle, way was made for the finger between the two genio hyoid and the two genio glossi muscles. A tenaculum was next passed through the apex of the tongue, by means of which it was drawn out of the mouth, and held so during the subsequent part of the operation by Mr. Mayo, (Mr. Tuson, Dr. Warren of Boston, U.S., and Mr. B. Phillips, being likewise present). Into the wound in the neck, a strong needle with an eye at the point in a fixed handle, was now conducted and passed through the basis of the tongue into the pharynx, a little to the left of the mesial line: the loop of ligature which it carried was then, by means of a blunt hook, drawn forwards out of the mouth, and the needle withdrawn from the wound over one of the ends. The loop being cut, two ligatures were obtained; one of these was placed along the upper surface of the tongue, so as to bound the disease on its left side, and carried through the apex of the tongue from above downwards by means of a large curved needle, through which the oral end of the other ligature was *now* also passed. Fixed in a porte-aiguille, this needle was next carried through the floor of the mouth immediately behind the last molar tooth, on the right side, directed at first, and for the greater part of its course, perpendicularly downwards, then inclined mesial, and brought out at the incision in the neck. There were thus two ligatures, the four ends of which hung out of this wound: one of the loops was so disposed as to encircle the right half of the tongue at its basis beyond the tumour; the other was placed longitudinally on the upper surface of the tongue, longitudinally and obliquely below. Being tied, (and this was done as tightly as possible,) the diseased mass was circumscribed posteriorly, laterally, and, in some measure, inferiorly. A third ligature was now passed through the fore-part of the tongue, so as to isolate at this point the diseased from the healthy structure.

The immediate effect of the operation was, that the tongue became fixed in the mouth, and the patient unable to articulate or swallow. For a fortnight all food and medicine were conveyed into the stomach through an elastic gum catheter. We need not mention details of little moment.

On the eleventh day the condition of the parts was as follows: the *diseased* was completely separated from the *sound* half of the tongue by a deep trench, so as to give it a truly bifid character, and the trench was continued across the basis, seeming to extend through the whole thickness of the part. The tumor was lessened in size by the sloughing of its surface, —it had wholly lost its vesicular and warty character, was of a pale red colour,—felt firm and resisting generally, and hard posteriorly. About the middle of its dental edge its colour was livid, and close to this on the upper surface the latter was irregular and ulcerated. Reunion by granulation had commenced between the diseased and sound portions of the tongue, but this was easily broken down by the probe. It was now evident that the former part derived some vascular supply from below, and the following method was employed to cut this off.—A loop of silver wire, properly bent, was passed over it, from the mouth, carried and depressed into the trench already mentioned as surrounding it, and being drawn forwards, the diseased part was found to be placed completely above the level of the loop. The two ends of the wire were next passed through a double polypus canula, and this being carried home under the tumor, to what may now be considered as its neck, the ligatures were tightened, the death of the part effected, separation ensuing on the fifth day (the seventeenth from the first operation.) The patient left the hospital on the 10th of July, and there is yet no appearance of a recurrence of the disease. Mr. Arnott adds :—

"It will be recollected that the mere tip of the tongue on the right side not having been included in the disease was not removed. For some time the patient was much annoyed by her inability to distinguish the taste of substances coming into contact with this portion of the apex, and by its getting perpetually pinched between the teeth. Although the former condition remainsunchanged, as I have this day (Nov. 13th) ascertained by the application of sapid bodies, she has become reooniled to it, and the latter does not now occur. For a longer time she was incommoded by food getting into the cavity left by the operation, and either remaining there unnoticed, or when she was aware of it, requiring the employment of the finger for its removal. But partly from the space there being diminished, owing to the development of the previously compressed parts, and partly from having acquired a greater degree of power in the use of the tongue toward its displacement, she is not subjected to as much inconvenience as heretofore.

The motions of the tongue are restrained by the cicatrix attaching it to the bottom of the mouth, and the tip cannot be protruded beyond the teeth, but a stranger would not discover by her speech that she had lost so large a portion of it, he would merely remark that she lisped." 29.

A case well deserving of perusal, and very creditable to Mr. Arnott.

V. Notices of the Occurrences at the Small pox Hospital, London, during the Year 1838. By George Gregory, M. D. Physician to the Small-pox Hospital.

This is a short, but a valuable report. We cannot much curtail it.

The total number of patients admitted into the Small-pox Hospital during the year 1838 was 712—416 males, and 296 females.

Of them 17 had diseases not variolous (such as lichen, spurious measles, &c.)

Total, having small-pox in some of its forms, 695.

Of them there died 187, being at the rate of 27 per centum.

Of these 695 there had been vaccinated in early life 302, of whom 30 died, being at the rate of 10 per cent.

The remainder, 393, were unvaccinated, and of them 157 died, being at the rate of 40 per centum.

No patient applied for admission having previously been *inoculated !*

In 1781 the admissions were 646 ; of them 257 died, being in the ratio of 40 per cent., the exact proportion in which the unvaccinated died during the year just passed.

Had the like rate of mortality extended to all the patients admitted, the total deaths would have been 277.

Dr. Gregory observes : —

" 90 lives therefore were saved in 1838, more than in 1781 ; and I think there can be no question that, while some portion of this may be attributed to the improved state of the present Hospital, compared to that in Cold-bath Fields, which received casual patients in 1781, the largest share is due to *vaccination.*

Even at this time the arrangements at the Hospital are wholly inadequate for the numbers. In the months of March and April typhus fever broke out in the wards in consequence of overcrowding, proving fatal to 12 persons, of whom 6 had been vaccinated, and 6 had not.

This would reduce the deaths by small-pox after vaccination to 24, being in the ratio of 8 per cent.

Of the 302 patients received with small-pox after prior vaccination, 97 had the disorder in that extremely mild form, commonly called ' *varicelloid.*'

The remainder (205) had it in variable degrees of severity, from the most distinct mild, through the several grades of semi-confluent modified and semi-confluent unmodified, to the confluent modified, simple confluent, and confluent malignant.

Great difficulties were necessarily experienced in determining who had been really vaccinated, of those who assumed to have undergone that process. The cicatrix was our chief guide ; but this often failed us, from the swollen and pock-covered condition of the arm at the time of the patient's admission.

The same difficulty occurred occasionally with those who professed never to have undergone vaccination. The highly modified aspect of the disease in many of them afforded strong presumption of prior vaccination, which the appearances of the arm gave some countenance to.

The errors on the one side may fairly be taken as balancing those on the other." 97.

The following statements have an important bearing :—

The average age at which the patients were received, both the vaccinated and the wholly unprotected, was 21.

79 children were received *under ten years of age,* unvaccinated, of whom 31 died ; 5 only at the same age, vaccinated, of whom none died.

The earliest age at which any *vaccinated* person was received was eight years.

The earliest age at which death took place after prior vaccination was fifteen years.

Between ten and twenty years of age, 246 *unvaccinated* were received, of whom 90 died.

Between twenty and forty years of age, 181 *unvaccinated* were received, of whom 86, or nearly one-half, died.

The increased severity of the disease, as life advances, is proved in like manner to hold true in respect to the vaccinated. Between fifteen and twenty-nine years of age (inclusive) 92 vaccinated persons were admitted, of whom 6 only died. (Say 6 per cent)

Between twenty and thirty (inclusive) 163 vaccinated persons were admitted, of whom 23 died, being 15 per centum.

The great bulk of the vaccinated cases were between the ages of eighteen and twenty-four.

13 were received having small-pox after vaccination, between the ages of thirty-one and thirty-five, of whom one died.

4 were received above thirty-five years of age, vaccinated, all of whom survived.

The greater number of the vaccinated underwent that process in early infancy, and but a few at a period of life when they could remember the event.

By far the larger proportion were vaccinated in the country, and exhibited only *one cicatrix* on the arm.

We subjoin a short table, with the expression of a wish that our experienced friend, Dr. Gregory, will not be costive of his communications.

Return of the Ages of the several Persons admitted into the Small-pox Hospital in 1838.

Ages of Patients having Small-pox.	UNPROTECTED.		VACCINATED.	
	Admitted.	Died.	Admitted.	Died.
Under 5 years.....	42	20	0	0
From 5 to 9	37	11	5	0
From 10 to 14	30	8	25	0
From 15 to 19	103	32	92	6
From 20 to 24	113	50	108	15
From 25 to 30	45	23	55	8
From 31 to 35	12	7	13	1
Above 35 years.....	11	6	4	0
Total	393	157	302	30*

* Of these 6 died of superadded typhus.

VI. REMARKS ON THE ACUTE FORM OF ANASARCOUS TUMOR OF THE SCROTUM. By R. LISTON, Esq., Surgeon to the North London Hospital.

Mr. Liston thus introduces six cases:—

"I propose to bring under the notice of the Society, briefly, a few cases of a different character from those above alluded to; cases of rapid distention of the scrotum with serosity, in which destruction of the cellular tissue and skin can, on the contrary, be arrested only by very early and free incisions.

This distention is or is not attended by redness or erythema of the surface; but there is reason to think, from the suddenness of the accession, and from the appearances on exposing the cellular tissue, that there is no actual inflammation of its texture; there being no induration, nor any appearance of lymph or puriform fluid in the areolæ.

The affection has generally supervened upon abscess or ulcer, perhaps trifling, in the perinæum or groin. Its accession has been sudden, the swelling and tension becoming very great and alarming even within a few hours. The most dependent part, generally the posterior, will be found at a very early period to present one or more deeply-seated ash and tawny-coloured spots; these extend; the integument is speedily involved; and, unless active measures be adopted, the entire coverings and investments of the testicles will be destroyed, and these organs exposed.

The progress of the case will depend materially upon the state of the patient's system, and upon the nature of the infiltration. Cases of œdematous swelling of these parts, the result of injury or of irritation in the neighbourhood, are continually occurring, in which none of these dreadful consequences arise, or need be feared. But in hospital practice, in some of those in the working classes, perhaps badly fed and clothed, or cachectic from any cause, and during unhealthy seasons, whilst erysipelas is prevalent, the surgeon will do well to look with suspicion at any sudden swelling in this region, and be prepared to treat it actively.

The fluid effused, and which falls, as it were, into the cellular tissue of the scrotum, is often dark, putrescent, and acrid; it causes destruction of all the parts it comes in contact with, and subsequently of the skin, as certainly, and sometimes as rapidly, as if the parts were infiltrated by urine. Cases of sloughing of the coverings of the genital organs are very generally supposed to arise only from this latter cause; and it is with a view of directing attention to the diagnosis, that the following cases are brought before the Society.

The same treatment, it is true, is so far required in either case. The scrotum must be freely opened at the point, where, in consequence of the pressure being greatest, the destructive process has commenced: but of course, in the acute anasarcous tumour, or as it may, in some cases, very properly be called, inflammatory œdema, there can be no occasion for interference with the urinary passage, by the application of instruments, either from without or within.

The history of the case, and the absence of hard tumour in the perinæum, which attends upon and very generally precedes infiltration of urine, will enable the surgeon to form a correct opinion of the nature of the mischief, and to direct his procedures properly and satisfactorily." 291.

We have been for some time familiar, and, probably, many surgeons are so, with the affection so well described by Mr. Liston. It is far from uncommon in the London hospitals, and about seven years ago there were three or four cases of it in the course of one year at the Lock. We have not much to add to Mr. Liston's account of it. We would merely observe, *that*, it not very unfrequently occurs independently of any ulceration in the groin or perinæum—and, *that*, it has seemed to us to occur under two sets of circumstances:—on the one hand, it may be developed as a consequence of injury, or of any disease in the neighbourhood, in persons of a tolerably strong habit, not obviously broken down in any way; on the other hand, (and this is the most common case) it presents itself, with or without apparent cause in the cachectic.

We hesitate to coincide entirely with Mr. Liston in the view he takes of its nature. We believe it to be diffuse inflammation of the cellular tissue of the scrotum, analogous to diffuse inflammation of the cellular tissue elsewhere. It is very true that the redness of the skin is not usually marked, though we never saw an erythematous suffusion absent—and that lymph and pus are not present if incisions are made early. But these circumstances may admit of explanation by the structure of the part and the habit of body which is usually present. This being commonly cachectic, the inflammation is of a low kind, and characterized by an abundant effusion of serum, and little vascularity. If incisions are not practised, we certainly have seen both lymph and pus beneath the skin, with sloughs of cellular tissue.

The effusion taking place into the spongy texture of the dartos, and into the loose sub-dartoic cellular membrane, unprovided with fat, and merely traversed by vessels, accounts for the rapidity and extent of the effusion. In a certain low condition of the bodily powers, inflammatory action coming upon such a part, serum is likely to be suddenly poured out into it, and the structure of that part, as well as the weakness of those powers, are little calculated to throw up a barrier of lymph, or to form pus with readiness.

In cases of stricture and of fistula perinei, it is often difficult to determine whether a sudden swelling of the scrotum depends on this affection, or on effusion of urine. No doubt, many cases of reputed effusion of urine from stricture, are really of this description. Fortunately, the treatment is much the same in both, early incisions constituting the pith of it.

Mr. Liston's cases rather prove, we think, our position. We will take a couple at random.

Case 1.—"J. A., aged twenty-three, a sailor. Admitted into the Edinburgh Royal Infirmary, March, 1834.

He had been shipwrecked on the coast of England, and exposed to the inclemency of the weather for many hours. He afterwards travelled on foot, towards the north, in great distress, scantily clothed, and badly fed. An abscess had formed near the verge of the anus, for which he applied for relief at the hospital. The opening of the abscess, which was anterior to the orifice of the bowel, and superficial, was somewhat enlarged. Two days afterwards the scrotum was found much swelled: the swelling had come on suddenly during the night. At the visit at twelve, A. M., there was a slight erythema of the perinæum, and the scrotum also was reddish, shining, and much distended, with a grey appearance at the lower and back part. Free incisions were made on each side of the septum, and slight sloughing of the skin and cellular tissue took place.

The after treatment consisted in the exhibition of antimonials, followed by bark, and the patient made a rapid recovery." 292.

Here after a slight operation, the scrotum swells suddenly, and is described as "reddish, shining, and distended," while the cellular membrane subsequently sloughs. Such circumstances would surely be deemed indicative of diffuse cellular inflammation elsewhere.

Case 2 (V.)—"S. H., a labourer, of spare habit. Admitted into the North London Hospital, May 19th, 1835.

The disease for the relief of which he applied to the hospital, was an abscess over the knee-joint, which was cured; but, just before he was about to be dis-

charged, he complained, for the first time, of slight pain and swelling in the groin; and, on examination, a small fistulous opening was discovered, surrounded by a blush of inflammation. He then said that the opening had existed for some time. The next day (May 28th) rigors took place; the skin was hot; tongue furred; bowels confined; and the erysipelatous redness extending over the groin and upper part of the right thigh, passing downwards to the scrotum.

On the 29th the scrotum had become very much swollen, and was attended with discolouration at its most dependent part. The cellular tissue of the prepuce was also much infiltrated.

A free incision was made in the lower part of the scrotum, near the raphé, and the cellular tissue found in a state of gangrene. A small vessel was divided at the lower part of the incision, from which about ʒxv. of blood were allowed to escape. Fomentations were applied to the groin, poultices to the scrotum, and twelve leeches to the epigastrium, as he complained of slight tenderness in that region. Warm water dressing was the next day applied to the wound; and, under this treatment, joined with purgatives, antimonials, and tonics, he recovered, and was discharged from the hospital on the 14th of June." 296.

Here the case is still more distinct. Erysipelatous inflammation spreads to the scrotum, and *then* comes on the peculiar affection of *that*. What can be more evident than the modification of inflammatory action by the special structure of the part? Erysipelas of the face when it invades the lids is particularly liable to occasion infiltration or abscess, or sloughing, because the cellular tissue of the lid is devoid of fat. Erysipelatous or diffuse inflammation, when it invades the scrotum, is particularly liable to occasion infiltration and sloughing there for a very similar reason. The lid is small and in many respects more favourably circumstanced than the scrotum, which influences the results.

Such is the view (it may be an erroneous one) which we are inclined to take of this affection. We conceive that the term diffuse inflammation of the scrotum would be preferable to "acute anasarca," which we cannot help thinking less applicable.

But whatever notion may be formed of the minor matter of name and nosological character, Mr. Liston equally merits our thanks for bringing the subject before the profession. Things are often known in a small circle and not known to the public. Whoever diffuses information deserves well.

VII. A CASE OF ANEURYSMAL TUMOUR IN THE ORBIT, CURED BY TYING THE COMMON CAROTID ARTERY. By GEORGE BUSK Surgeon to the Seaman's Hospital, Dreadnought.

Mr. Busk has partially adopted the Horatian precept, and kept this case by him for three years, that time might sanction the expectations of success. It were well if all case reporters acted similarly.

Case.—A healthy seaman, aged 20, was admitted into the Seaman's Hospital, July 13, 1835, with severe concussion of the brain, following a blow on the right side of the head. A variety of symptoms followed, which we do not think it necessary to particularise, suffice it to say that there ensued onyx of the left eye, ulceration of the lower half of the cornea, small-pox, and great noises in the head.

About the latter end of January, the ulcer on the cornea was filled up, leaving an opaque cicatrix which occupied more than its lower half. Through the upper half, which had retained its transparency, he could see very well when the upper eyelid was raised. The globe of the eye was very prominent, and the eyelids were generally swollen; several large, tortuous conjunctival vessels were observed, passing to the lower edge of the cornea. On the first of February, when examining the eye, Mr. Busk, for the first time, perceived a distinct pulsation of the globe; and on more close investigation, detected also a firm pulsating tumor in the upper and inner part of the orbit, immediately within the superciliary ridge, and about half an inch in its transverse and longest diameter.

This tumor appeared to be situated between the levator of the eyelid and the bone, and was not evident externally; but when the eyelid was raised it caused some projection of the loose conjunctiva. The pulsation of the tumor was accompanied by a very distinct thrill, which could also be felt on pressing the parts in its immediate neighborhood. Through a small ivory stethoscope a very loud whizzing sound was communicated; this could also be heard on applying the instrument over the inner canthus of the right eye, and on the left side of the frontal bone, as high as the roots of the hair, and nearly as far back as the ear. The eye felt hot and uneasy; but, otherwise, he had no pain, and complained principally of very loud noises in the head; those in the right ear like the sound of church bells, and those in the left, the breaking of waves on the sea shore.

Mr. Busk adds:—

"As temporary pressure on the left common carotid put a stop to the pulsation in the tumour and eye, and to the accompanying sounds, as well as to the noises in the head, it appeared clear that they all depended on a common cause, and that, probably, an aneurism of some vessel within, or close upon the orbit. I was not at the time aware of the two similar cases to which I shall afterwards refer; but entertained no doubt as to the propriety of treating this like an aneurism in any other part, and of tying the left common carotid. Twenty ounces of blood were taken from his arm the same evening; and, on the following day, February 2, the carotid was tied in the usual place and manner. Immediately on tightening the ligature, the pulsation of the tumor, and that communicated to the globe, ceased, together with all the sounds, both internal and external. In the evening, four hours after the operation, obscure pulsation could be felt in the tumour, which had not however resumed its original size. The whizzing sound could also be plainly heard through the stethoscope, and over the same extent of surface as before the operation. The internal noises were also at intervals, nearly as loud as before, but were sometimes absent. There was no pulsation in the temporal artery. He complained of pain in swallowing. Pulse 110. An opiate was given, and an evaporating lotion applied to the face and head.

The next morning the pulsation was very obscure, and the sounds much diminished. He had not slept, and complained much of pain on deglutition and on coughing, and of severe pain in the left hypochondrium. Pulse 120, sharp. A bleeding of sixteen ounces afforded immediate relief, and in the evening he was easier in every respect. On the 4th no remains of the tumor could be felt, and all pulsation was gone from the orbit, nor could any sound be heard by means of the stethoscope. The internal noises were also quite absent, and his hearing was somewhat improved. Pulse 100 soft; skin moist; and tongue clean.

On the 6th the eye appeared less vascular than before the operation, and was

not so prominent. He had occasionally some noise in the left ear, but none in the right. A small quantity of grumous blood passed from the left nostril during the night. On the 11th the eye was still more retracted within the orbit, and there was no pain nor pulsation. He sat up several hours. On the 15th the ligature came away, and on the 18th his state is thus noted:—the wound was much contracted; the eye hardly prominent and much less vascular. The ulcer in the lower half of the cornea filled up, leaving a dense leucoma, to which ran a large tortuous vessel. Vision perfect as far as the loss of transparency of the cornea would allow. There was no pulsation, nor any noises. Pulse 70; soft; appetite good; no pulsation in the temporal artery. The paralysis of the left side of the face and muscles of the globe continued complete; but sensation was perfect except on the left side of the nose; and he was more deaf in the left ear than in the right. From this time no material change took place, up to the time of his discharge from the hospital, on the 28th March, 1836. He complained almost constantly of pain, commencing about the infra-orbitary foramen, and extending towards the nose, which was in some degree relieved by the use of veratria." 130.

He returned to his occupation as a seaman, made a voyage to Quebec, no trace of tumor or pulsation could be detected in or about the orbit, and no pulsation could be felt in the carotid or any of its branches.

After alluding to several cases more or less similar, Mr. Busk, in a note, mentions one which occurred to Mr. Scott, at the London Hospital, of a parallel character to his.

Case.—A boy, William Cooper, who had fallen into a ship's hold, was brought to the London Hospital, October 2nd, 1834, with concussion of the brain, violent contusion and swelling on the right side of the head, and protrusion of the right eye, which was fixed and motionless, the pupil dilated and vision lost. There were no symptoms of cerebral pressure.

He gradually recovered from the concussion of the brain, the eye becoming gradually more prominent. The protrusion of the globe immediately after the accident, without symptoms of cerebral compression, proved that it arose from extravasation of blood within the orbit, and the further continued protrusion rendered it probable that the aperture in the vessel from which the blood escaped had not closed;—the symptoms were not so acute as to indicate suppuration. As the globe became more prominent, pulsation was felt on pressure, and when the palpebræ were separated, the eye could be distinctly seen to be propelled forward at each stroke of the heart.

Pressure was made on the globe; but, after being borne for two days, it occasioned so much pain that it was abandoned. On Tuesday, November 10, just after examining the eye, a profuse arterial hemorrhage occurred from the nose. Mr. Scott commanded it by pressure on the common carotid artery, and immediately secured that vessel. The protrusion of the globe directly receded in a great degree, and its prominence afterwards gradually diminished.

Mr. Busk is inclined to believe that these are instances of true aneurysm, rather than of erectile tumors, and for these reasons:—

"1. The sudden accession of the disease attended with pain.

2. Its rapid increase.

3. The powerful pulsation occurring in the tumours when recent and small; in all of which circumstances do they differ from the erectile tumours as des-

cribed by Mr. John Bell under the name of aneurism by anastomosis; and when to this is super-added the strong aneurismal whizzing sound, which was heard over so extended a space in the present instance, and which may possibly have existed in the others, as they were attended with similar internal noises, the presumption of the affection being in all really an aneurism of some vessel in the orbit, appears to me materially strengthened; and Mr. Guthrie's case may possibly lead to the supposition of the ophthalmic artery itself being the seat of the affection.

The success of the treatment by ligature of the carotid cannot be adduced as further proof of the correctness of this view, since the same success attended that operation for an undoubtedly erectile tumour of the antrum in the hands of Mr. Pattison; for an external nævus in one of these cases in which it was employed by Mr. Wardrop." 134.

VIII. STATISTICAL NOTICES OF ONE HUNDRED AND TWENTY CASES OF CARCINOMA UTERI, WITH REMARKS. By J. C. W. LEVER, Esq.

Mr. Lever makes some observations on the value of the numerical system, as a test of the correctness or erroneousness of our opinions, observations too accordant with the general tenor of our own, to make it requisite for us to quote them.

Mr. Lever has selected as the subject matter of this paper, cases of undoubted "Carcinoma," a disease which never fails to develop its malignant and fatal termination. It occurs, he tells us, more frequently than at first thought we might be led to expect; the registers of the obstetric out-patients of Guy's Hospital show that the proportion of cases of carcinoma uteri to cases of other uterine diseases, is nearly as 1 in 7, or 13·5 per cent.

Age.—The period of life most obnoxious to the disease is from the 40th to the 50th year. For, there were:—

Between 25 and 30 years	3·3 per cent.
30 — 35	15·
35 — 40	10·83
40 — 45	20·
45 — 50	20·
50 — 55	13·3
55 — 60	14·16
60 — 65	0·83
65 — 70	1·6
70 — 75	0·83

Condition.—Single women bear a proportion of 5·83 per cent., married women 86·6 per cent., and widows 7·5 per cent., affording a complete refutation of the statement, that celibacy favours the development of the disease.

But are there not many more married than unmarried women between the ages of 40 and 50? If there are, that would materially affect the calculation.

Ages at Marriage :—

31·16	per cent.	married	between	the	ages of	15 and 20
36·66	-	-	-	-	20	25
20·83	-	-	-	-	25	30
1·66	-	-	-	-	30	35
0·00	-	-	-	-	35	40
0·83	-	-	-	-	40	45

Number of Children.—The number of children produced by 113 married women amounted to 596, of whom 301, or 50·51 per cent., were boys, and 295, or 49·49 per cent., were girls. If from these 113 married women, we deduct 10 who had born no children, we have 103 bearing women, to produce 596 children, rather more than $5\frac{3}{4}$ to a marriage. One of the sterile women married under 20 years of age, seven under 30 years, one under 40 years, and one at the age of 44 years. Ten barren women out of 113 will amount to 8·8 per cent. This per centage exceeds the average of barren women, for it has been found that 1-20th, or 5 per cent., of married women, are wholly unprolific.

Abortions.—Forty per cent. of the females had miscarried. The collective total of their abortions were 122, an average of rather more than 2·54 to each woman. Adding the miscarriages to the number of children born, we shall have the number of conceptions, and we shall find, that out of 100 conceptions, the abortions were nearly 17, or, more correctly, 16·8.

Complexion.—The number of light complexioned women affected with this malady, amounted to 20·8 per cent., while those who are recorded as being of dark complexion, amounted to 79·16 per cent.

State of Uterine Health in Early Life.—Only 25 women, or 20·8 per cent, had enjoyed good uterine health in early life, while 95, or 79·16 per cent., had suffered either from (what is termed) functional disease, or syphilis. The most frequent malady was dysmenorrhœa, with which no less than 66 had been afflicted.

The proportions stand thus:—

	per cent.
Those who had had good uterine health - -	- 20·8
Those who had suffered from amenorrhœa - -	- 15·8
Vicarious menstruation	- 0·83
Menorrhagia - -	- 1·66
Dysmenorrhœa -	- 54·16
Syphilis - -	- 6·6

Duration of the Disease, and Termination—Death occurred in 107 cases, the average duration of the diseases being 20¼ months. The shortest duration of the disease was 3 months, the longest 66 months. In single women the average duration of life was 21·66 months; while in married women, who had borne no children, it was 21·3 months. In females who in earlier or later life had suffered from dysmenorrhœa, the average duration was 19·7 months; in those who had suffered from syphilis, 21 months; from

amenorrhœa, 22·9 months, while in those who in early life had enjoyed good uterine health, it was 22·59 months.

Mr. Lever adds :—

" In six patients only have I been able to trace the existence of carcinoma in the maternal parent, four were affected with carcinoma uteri, and two with carcinoma mammæ ; this, however, must not be regarded as an average or proportional number, for many women could give no account of their parents, while others stated their mothers to have died from diseased womb, without being able to state the precise disease." 272.

A valuable paper, which induces us to hope that Mr. Lever will continue to pursue, and not forget to promulgate, his researches.

IX. CASES OF MEASLES, OCCURRING OFTENER THAN ONCE IN THE SAME INDIVIDUALS.

By JOHN WEBSTER, M.D., Consulting Physician to the St. George's and St. James's Dispensary.

Though, in the great majority of cases, measles attack the same individual only once in his life, yet several exceptions to this law have been recorded, and Dr. Webster communicates two which occurred under his own observation, with one which was seen by Dr. Forbes.

Case 1.—Master F. H., in the early part of 1837, being then two years old, had a regular attack of measles, along with his elder brother and a cousin, all then living in the same house. I attended him throughout the disease, which exhibited the usual and unequivocal symptoms of that complaint : the eruption was well marked, copious, and continued apparent on the skin for the ordinary period ; whilst the affection of the eyes, of the air passages, the cough, and the violence, as well as the duration of the febrile symptoms, placed the nature of his malady beyond any doubt ; from which however, in due time, my patient recovered completely, by ordinary antiphlogistic treatment.

On the 23rd of March last, that is, about two years after the first attack of measles, Master F. H. became restless and slightly feverish ; but it was only two days afterwards, or the 25th, when an eruption having appeared on his neck and face, the exact character of this patient's complaint remained no longer doubtful. He now had considerable fever, with quickness of pulse, along with the commonly remarked catarrhal symptoms, such as discharge from the nose, watery eyes, and slight cough ; he complained likewise of thirst, and he had a foul tongue. On the 26th the eruption continued copious on the arms, legs, and body, at the same time appearing in clusters, slightly elevated, and quite characteristic of its nature ; the face, also, was now a little swelled, whilst the catarrhal affection remained ; and had any uncertainty yet existed, regarding the nature of this eruptive disease, it would have been entirely removed from the mind of the most sceptical observer by examining a case exhibiting, as this one did, so many well-marked symptoms. The eruption, on the 27th, became less evident ; and, by the evening of the 28th, it had almost disappeared, the patient being otherwise much better. On the 29th, Master F. H. was nearly convalescent ; and, by the 31st of March, he got quite well." 248.

Of the next instance we may content ourselves with remarking, that the patient, a young lady, passed through the measles at Madras, in 1826, when four years old—a second time, at Blois, in 1832—and a third time, under Dr. Webster's personal inspection, in London, in 1837.

Dr. Forbes attended Lord ————, then ten years old, for measles in 1835, and in 1839, he attended him for measles again.

X. REMARKABLE CASE OF DRY GANGRENE, OCCURRING IN A CHILD THREE YEARS AND SEVEN MONTHS OLD. By SAMUEL SOLLY, F.R.S. &c.

Case.—On the 29th January, 1839, Mr. Solly visited, with Mr. Bury, of Farnham, William Chandler, aged three years and seven months. He had been weakly from birth. His father is a bargeman, earning about a pound a-week. His mother was a healthy-looking woman, but delicate; she has had four children, the eldest seven years old, perfectly well; the second died at two months; the third, William Chandler, is the subject of the case; the youngest was weakly, and since dead. The general food of the family has been bread and potatoes, with meat two or three times a-week.

Mr. Solly thus describes his state:—

"His right fore-arm was gone, having been partially amputated by nature at the elbow-joint by the disarticulation of the radius, though the ulna had been divided lower down, opposite a point which might be seen in the detached radius, as at that place the bone was thinner, a portion of its surface having been removed by absorption, where the line of separation had first commenced. The slough had extended above the elbow-joint, where nature appeared to be making a second attempt at amputation, from the distinct though comparatively pale line of ulceration betwen the living and dead portions of the limb.

The whole of the left fore-arm, and about half of the upper arm, was in a state of dry gangrene; but there was a distinct line of separation in the upper arm.

The foot of the left leg was completely removed just above the ankle-joint, betwen the epiphysis and the shaft of the tibia and fibula, leaving the extremities of the bone exposed, the soft parts presenting a surface healthy and granulating in one part, but sloughy in another.

On the right foot the phalanges of the second and third toes had been removed by the same unsparing hand, the stumps having a healthy cicatrix; but on the calf and knee of the leg there were livid spots. Such was the extraordinary appearance of this poor little child the first time I saw it. The pulse in the coratids was 140, feeble, easily arrested, but distinct to the eye.

The action of the heart more feeble than natural, but unaccompanied by any unnatural or irregular sound. The mother observed that, when every thing was quiet, at night, it sounded as loud as the ticking of a watch.

The intellects were perfect, and the child, on the whole, wonderfully quiet and tranquil, but complains much of feeling cold unless close to the fire. From the mother's account I learned that the disease commenced at the latter end of last August, both his feet becoming of a blackish purple colour; that hot flannels relieved them only for a short time; sloughs, called by the woman *set-fasts*, began about the beginning of September, on the right leg first, above the heel. These sloughs separated. The sore healed in about a month; that on the left leg never healing, but gradually extending over the foot, and a line of demarcation was ultimately set up. Amputation gradually took place, and the limb was entirely removed by December the 30th.

The disease commenced in the left upper arm, about the middle of November, on the dorsal surface of the wrist. It followed on the right about a fortnight afterwards, commencing below the elbow, and the ulna was divided on the 18th of January; but nature, apparently not being able to effect the amputation perfectly in that spot, recommenced above it. And the radius, together with the

hand, was separated at the elbow joint on the 26th January. I could not ascertain the date of the amputation of the two toes on the right foot." 258.

The left arm separated on the first of February, about midway between the shoulder and elbow. The soft parts of the right arm came away on the 5th instant. The dead parts attached to the left leg were thrown off on the 18th. The reparative process proceeded well, and Mr. Solly writes thus :—

" On the 22nd of April I again visited the case. When I found, to my astonishment, that nature, unassisted by the surgeon, had amputated the three extremities, and formed stumps, which might shame many formed by the operator's knife. The stump of the right arm was as perfect as could be desired; the bone in the left projected slightly, but was in the course of removal by absorption. The stump of the left leg was nearly healed, with a very slight granulating projection opposite the bone. The child's health was much improved, his spirits good, and he was freer from pain.

In this case the progress of the disease seems to have been identical with that which is usually observed in senile gangrene ; for instance, its first appearance was a dark coloured spot, unaccompanied with pain or swelling, or increase of heat in the part ; and very slight redness at the line of demarcation, between the healthy and diseased portions of the limb.

Dr. Carswell, in his admirable article ' Mortification,' in the Cyclop. of Medicine, observes, ' that it is stated, by pathologists, that this form of mortification sometimes occurs in young persons ;' but that he himself has never seen it in young persons, and considers it a statement which has not been supported by facts, and I have not myself been able to meet with any case which bears any analogy to it." 266.

A striking case certainly.

XI. CASE OF CONGENITAL ABSENCE OF THE PERICARDIUM, WITH OBSERVATIONS.— By T. B. CURLING, Assistant Surgeon to the London Hospital.

Case —The subject of this uncommon malformation was a gardener, aged forty-six, who was admitted into the London Hospital under the care of Dr. Gordon, January 28th, 1839. After exposure to wet he had been seized with symptoms of paralysis, which commenced in the lower extremities, and gradually extended upwards, until the muscles of respiration becoming affected, asphyxia ensued, and he died on the 18th of February. He had previously enjoyed a good state of health, but, before the age of puberty, had been subject to attacks of profuse epistaxis. Nothing remarkable was observed in the action of the heart, or in the pulse.

" The main morbid appearances, consisted of ramolissement of the central part of the whole medulla spinalis, deep injection of the mucous membrane of the bladder, and prostatic and membranous parts of the urethra, suppuration of Cowper's gland, and deposits of lymph in the substance of the testicles, with adhesions of the tunica vaginalis. On opening the cavity of the chest, by raising the sternum with the costal cartilages, I was much astonished at finding the heart completely exposed, lying loose in the cavity of the left pleura, in immediate contact with the lung, without any appearance whatever of pericardium. The heart was rather large and flabby, and in its natural position in the chest. On the anterior part of the left ventri-

cle there was a small white opaque patch, and there was another of larger size on the posterior surface of the right ventricle. Nearly the whole front of the right ventricle was coated with a layer of fat. The vessels connected with the heart exhibited nothing remarkable, their relation being perfectly natural. On introducing the little finger into the aorta, its valves appeared to be healthy. The heart was a little overlapped by the anterior edge of the inferior lobe of the left lung, to which it was connected by a slight adhesion about a quarter of an inch in length. The pleura covering that part of the left lung in contact with the heart, was opaque, white, and thickened. The pleura was easily traced from the left lung, along the large pulmonary vessels, to the heart, which it invested so as to form a reflected pericardium, thence passing over the pulmonary vessels on the right side, and the commencement of the aorta, it went forwards to join the pleura costalis, being at first in close relation to the right pleura, to which it was connected by loose cellular tissue, but afterwards separating to leave space for the anterior mediastinum. On the right side of the heart, just above the junction of the inferior vena cava, and close to the diaphragm, there was a pouch in the serous membrane, with a defined margin inferiorly, into which the appendix of the auricle projected. The left phrenic nerve crossed the trachea opposite the first bone of the sternum, and, passing to the front, and rather to the right side of the heart, proceeded to the diaphragm along the anterior mediastinum. The right phrenic nerve passed between the two layers of the separate pleuræ, about two inches behind the left. The lungs were healthy, with the exception of a little emphysema at the margins of the lower lobes. There was an old adhesion half an inch wide, connecting the outer part of the upper lobe of the left lung to the pleura costalis."

This account is very explicit and satisfactory.

XII. CONTRIBUTIONS TO THE PATHOLOGY OF THE SPINAL CORD. By WILLIAM BUDD, M. D.

The object, a laudable one, of Dr. Budd, is to illustrate the operation of the "reflex function" of the spinal marrow in man, in the same way as it is exhibited in decapitated animals. This he does by a series of cases.

Case 1.—John Lang, aged 43, and of temperate habits, without known cause gradually became crooked in the back, and paraplegic, at the age of 18; but regained perfect use of his limbs at the end of two years. The paralysis returned twice; first after an interval of twelve years, and again after two more; each time it followed protracted exertion, but did not continue longer than a few weeks. It returned for the fourth time, and had continued fifteen months, when Dr. Budd first saw him. The curvature of the spine had not increased since the first illness, and in the intervals mentioned the health was quite good, There never had been, nor was there subsequently, any indication of abscess. In the first three attacks sensation was nearly extinct in the palsied limbs, but they had never exhibited involuntary movements. Dr. B. first saw him in July, 1836; and between that time and April, 1837, visited him many times, and took the following notes of his case:—

"Sensation in the lower half of the body begins to fail at the umbilicus, and is very much impaired immediately below it: in the lower extremities it is nearly extinguished; when these are smartly pinched, the patient perceives the nature of the act, but the sensation is very feeble. Has no power of voluntary motion over his lower extremities; once or twice, while he was making strong efforts of the will, I observed a very limited motion of the great and second toes; but had I not watched very narrowly, these movements would have escaped my notice; after having occurred once, or at most twice, he could not repeat them.

These are the only voluntary movements of the lower extremities which the patient can execute. When, however, any part of the skin is pinched or pricked, the limb that is thus acted upon jumps with great vivacity: the toes are retracted towards the instep, the foot is raised on the heel, and the knee flexed so as to raise it off the bed; the limb is maintained in this state of tension for several seconds after withdrawal of the stimulus, and then becomes suddenly relaxed. Once or twice, while the leg was thus excited, the great and second toes of the right foot were simultaneously drawn towards the sole; the converse never occurred, and, in general, while one leg was convulsed, its fellow remained quiet, unless stimulus was applied to both at once. The contractions excited by stimulating the left leg are uniformly more vigorous than those excited in the right by a like stimulus. In these instances, the pricking or pinching was perceived by the patient; but much more violent contractions are excited by a stimulus of whose application he is perfectly unconscious.

When a feather is passed lightly over the skin in the hollow of the instep, as if to tickle, convulsions occur in the corresponding limb much more vigorous than those induced by pinching or pricking; they succeed one another in a rapid series of jerks, which are repeated as long as the stimulus is maintained. In these experiments the patient is quite unconscious of anything touching his limb. When asked if he feels any thing, his answer invariably is, 'No, I feel nothing, but you see my leg feels well enough.' When any other part of the limb is irritated in the same way, the convulsions which ensue are very feeble, and much less powerful than those induced by pinching or pricking. No movements are excited in his lower extremities by tickling any point in the upper half of his body, though such tickling occasion laughter.

Convulsions, identical with those already described, are at all times excited by the acts of defecation and micturition. At these time the convulsions are much more vigorous than under any other circumstances, insomuch that the patient has been obliged to resort to mechanical means to secure his person while engaged in these acts. To this end two large loops of saddlers' webbing are nailed to the floor; into these the feet are inserted; while two longer loops, also nailed to the floor, are adjusted over the knees as soon as the patient is placed on the night-stool; an attendant is also required to hold down the thighs.—During the act of expulsion the convulsions succeed one another rapidly, the urine is discharged in interrupted jets, and the passage of the fæces suffers a like interruption. The convulsions become more feeble towards the completion of the act, and the stream of urine becomes continuous. In the case of making water, the convulsions are uniformly more vigorous the more the bladder is distended. When sufficient precautions had not been taken to secure his person, it had occurred to the patient to be thrown violently forwards on the floor. The passage of urine is felt by the patient, but the sensation is of a smarting kind. Slight involuntary contractions occur in the legs whenever the bladder is distended, and also when the desire to relieve the rectum is manifested. In all these circumstances, the convulsions are perfectly involuntary, and he is unable, by any effort of the will, to control or moderate them. The passions have no power of exciting convulsions. After the lower extremities have been much excited a sense of tingling in them is experienced. Motility and sensation in

the upper half are unimpaired, and quite natural. Appetite and digestion pretty good; loss of flesh inconsiderable, and not progressive; nutrition of the legs good.'" 158.

In the Spring of 1837, Lang regained voluntary power in his lower extremities, with some increase of sensation. As voluntary power augmented, the susceptibility to involuntary movements, and the extent and power of these diminished.

Dr. Budd observes:—The interest of this case lies in the coincidence of these two circumstances: total loss of voluntary power in the lower extremities,—involuntary muscular contractions, excited by application of stimulus to the skin or mucous membranes. There can be no doubt that these contractions were of the same nature, and excited by the same process as those observed in a decapitated animal. Although sensation was never quite extinct in Lang's lower extremities, it was evidently not concerned in the production of the involuntary contractions; for when an artificial mode of stimulus was employed, the convulsions were uniformly the most vigorous in that case in which the application of it was not felt by the patient, namely, when the hollow of the foot was slightly touched with a feather. Here then we have oral evidence from the subject of experiment, that these acts are quite independent of sensation and volition. The fact that such vigorous convulsions were excited by touching the hollow of the foot with a feather, is of great interest, and tends to show that the nerves which transmit these impressions to the spinal marrow are,—if not the same with those of true sensation,—most actively excited by a stimulus which produces strong impressions on the sensitive nerves. Every one knows how urgent is the sensation of tickling in the hollow of the foot.

In a case, somewhat similar, (Dr. Budd's *second*) the convulsions caused pain.

Case 3.—A sailor, aged 17, who had been struck on the back by a boom, presented these symptoms:—

Sensation in the lower extremities unimpaired; voluntary motion abolished in these limbs, which are rigid, from permanent contractions of the muscles. The legs are sometimes extended, sometimes bent upon the thigh, and the transition from one condition to the other is quite involuntary. When these limbs are in extension it requires great force to bend them in the slightest degree; and when that force is withheld, they immediately return to their former position; the converse holds when the legs are flexed. When any part of the skin of the lower extremities is pinched, the corresponding limb jumps with great vivacity; if previously in extension, it momentarily assumes a state of flexion, and *vice versâ*. Occasionally, when one leg is thus excited, its fellow is, at the same time, similarly affected, but not so powerfully. The muscular contractions thus excited is very powerful; it is quite involuntary, and cannot be modified in any way by influence of the will.—When any other part of the body is pinched no analogous movements are induced; but when the patient voids his urine, both legs are always affected in the same way as by pinching their integument. When the legs have been much stimulated by pinching, they become affected with a quivering motion, which lasts some minutes: this also occurs after micturition; no pain whatever in the legs, nor sense of fatigue; calves stout and developed;

dejections voluntary. There is curvature of the spine, formed by prominence of the dorsal vertebræ, from the fourth to the ninth, inclusive. Motility and sensation perfectly natural in all parts of the body, other than the lower extremities. General health not much impaired. Soon after this the legs became less rigid, and on the 24th of March were observed to be quite placid; convulsive movements could still be excited, by pinching or tickling, but were much more feeble than before.

He died of phthisis, about eight months after receiving the injury.

Dissection.—Prominence of the dorsal vertebræ from the 5th to the 9th, inclusive—laminæ somewhat softened, especially on the right side—a little pus external to the dura mater—dura mater there dark and vascular, distended with serous fluid below—diameter of the cord small there—vessels of the pia mater congestive above and below the curvature.

The cord itself was of natural size; and a portion, about two inches in length, corresponding to the curvature, softened in the posterior columns.—The tissue was not diffluent, but became flaky and partially dissolved, when a small and gentle current of water was poured on it. This did not happen when a like current was similarly directed on other portions of the cord.—This breaking down of the tissue was much more marked in the posterior than in the anterior columns, which were scarcely, if at all, softened, and resisted considerable traction. After the arachnoid had been removed, the posterior columns had still sufficient consistence to retain their form.

The affected portion was quite white, exhibiting no vascularity or bloody points. The nerves within the vertebral sheath, arising from the softened part, were firm, and of natural appearance. The cord, above and below, perfectly healthy, firm, and of good colour. When the contents of the chest were removed, an abscess was found, surrounding the bodies of the diseased vertebræ, its anterior wall being formed by the aponeurosis of the vertebræ.

We think it cannot fail to strike the reader that the *posterior* columns of the medulla were diseased, while sensation was *unimpaired*. How this quadrates with our notions of the functions of those columns, we do not clearly perceive.

Extensive reflex actions, Dr. Budd goes on to state, are the most striking symptoms of apoplexy of the pons varolii. M. Cruveilhier quotes a case from Ollivier.

"A man, at work in the fields, complains all at once of acute pain and buzzing in his ears. He immediately runs off, as if to escape from threatened danger. He drops, and there is loss of consciousness; frequent, irregular, and noisy breathing; sometimes stertorous. He sneezes twice with violence; there is stiffness and convulsions of the limbs, alternating with a state of collapse; froth at the mouth, and an eleptiform condition. He dies at the end of five hours, and was not observed the last two. It was not determined whether or not sensation was abolished, but a convulsive movement of the right arm was observed when the skin of that limb was pinched, and a similar movement at the moment when the integuments were pierced in venesection." 167.

On examination after death, the pons varolii was found converted into a a sac, full of blood, in part coagulated. The blood had found its way to the

surface of the pons by a small lateral opening, and also into the fourth ventricle, which was distended with it.

M. Ollivier states that he has since seen many cases of apoplexy of the pons, at the moment of attack, and has always remarked convulsions of the extremities.

Dr. Budd relates an interesting but long case, too long indeed for our pages, and too closely connected in its details to admit of useful condensation. But we must observe that, to our mind, it goes far to prove the imperfect condition of the theory of "the reflex function," a theory which we fear is yet to be established in many particulars, and is scarcely adequate to the explanation of all that it professes to embrace.

Dr. Budd reports another case, highly interesting also. But we must pass by its details and content ourselves with the summary he furnishes of the principal facts contained in all the cases, and of the inferences that may be drawn from them.

1st. That the involuntary movements excited in the palsied limbs, were the same in kind as those observed in decapitated animals.

2nd. That these movements were quite independent of sensation, and that they varied in extent and force, inversely with the degree of voluntary power possessed by the affected limbs; being the most forcible when the loss of voluntary power was complete, and diminishing gradually in extent and force as that power increased.

3rd. Irritating one leg generally caused movements in that leg only; in some cases it caused movements, but more feeble ones, in the other leg also, and in the arms when they too were paralysed: facts completely analogous to those observed in decapitated animals.

4th. Impressions on the soles were more efficient than any that were tried on other parts of the skin in exciting in voluntary movements; and heat, although not producing sensation, was a powerful means of excitement.

5th. In one case, impressions on nerves arising above the seat of injury, excited convulsions in parts receiving their nerves from below; a fact which proves, that influences from impressions received on incident nerves, at any point, are diffused through the cord. This leads Dr. B. to remark that convulsions are rarely, if ever, spontaneous, in the strict sense of that word, for the multitude of impressions constantly received on the surface, especially in the mucous membranes, are probably sufficient, when the motor function of the cord is much exalted, to excite all those convulsions usually called spontaneous.

6th. That the convulsions observed were not associated with a sense of fatigue, but that the power which caused them was subject to exhaustion, and renewed by rest. In cases of injury to the spine, some time elapsed before the palsied parts exhibited involuntary movements; this was probably owing, in some measure, to concussion of the cord, for in decapitated animals these movements may be instantly excited.

7th. Strychnia given internally increased the susceptibility to involuntary movements, and caused spontaneous convulsions that were limited to the palsied parts.

Prussic acid, as well as tincture of digitalis had a decided effect, in one case, of suspending or quieting spontaneous convulsions.

8th. That the dependence of priapism on distention of the bladder, ob-

served in one case, tends to show that external impressions may be reflected by the spinal cord, so as to excite organic processes,—such as, vascular turgescence,—in the same manner as to excite muscular contractions.

Dr. Budd makes some curious concluding remarks:—

"I shall now notice a circumstance in the pathology of tetanus, which gives that disease a link of connection with the preceding cases, and which has been overlooked by many physicians, and has received from none the attention it deserves: I allude to the fact that the convulsions of tetanus, when already present are rendered much more powerful by impressions made on the skin or senses, and when absent, as in the intervals which usually occur, may invariably be excited by such impressions. The fact is stated by Dupuytren in his 'Leçons sur les plaies par les armes à feu,' in the following words:—

'L'intelligence des malades reste ordinairement saine; rarement il survient du délire. Cependant la sensibilité est très developpée, et à mesure que la maladie marche, ou la voit s'accroitre de plus en plus, et se monter à tel point que le moindre bruit, la moindre sécousse, les plus faibles émotions suffisent pour la mettre en jeu et faire entrer le système nerveux, et le système musculaire qui est sous sa dépendance dans un état de convulsion.'

It is therefore of great importance in the treatment of this disease, to avoid multiplying impressions, especially those of a painful kind. In this point of view, the practice of applying leeches repeatedly, and in great number, is very objectionable, for it is not questionable that the evil here alluded to is not compensated by any ascertained advantage. Repeated cupping, blistering, and also repeated purging—means often employed—are open to the same objection. While on this topic, I may be allowed, also, to question the propriety of giving opium in the treatment of tetanus. It has been ascertained that the effect of that drug is to excite, and not quiet, the motor function of the spinal cord; indeed, it is well known that the motor acts of the cord may be rendered much more active and powerful by giving, before decapitation, opium to animals that are to be subjects of experiment. Believing that, after ample trial, experience has not established any advantage in the use of opium, I consider these objections, furnished by theory, to be motives sufficient for its future exclusion from the treatment of tetanus. If in the choice of remedies we are to be guided at all by physiological considerations, it is much more rational to seek for remedies for tetanus in that class of substances known to exercise sedative influence on the motor function of the cord. I may mention hydrocyanic acid, conium, and digitalis, as deserving more ample trial than has yet been given them.

Hitherto, the treatment of tetanus has been conducted in violation of all known physiological principles: it is to be hoped that our improved knowledge of the functions of the spinal cord will at length lead us to the discovery of more successful methods." 190.

We are not sure that Dr. Budd's condemnation of opium and of purgatives is quite fair, or, in point of fact, quite correct. If there are two plans of treatment which have proved more successful in chronic tetanus, that is, in curable tetanus, than others, they are,—purgatives, and calomel and opium. Nay, we would almost venture to affirm, that opium has been as successful in acute tetanus as any other drug, which, though certainly it does not say much, yet says something in its favour. The hydrocyanic acid, which acts on physiological principles, has been anything but untried, though, as far as we know, it has not proved more serviceable than its rivals.

Dr. Budd reprobates the application of leeches. Certainly local and general depletion have both failed, probably because the hypothesis of in-

flammatory action on which they were employed, is a deceptive one. But were the convulsions of tetanus attended *with* vascular action, that is, were there any indication for leeches, we should hesitate to discard them in obedience to the excito-motory doctrine, and because they might prove excitants of the convulsions. We suppose that in the convulsions dependent on cerebral congestion in children, leeches would, theoretically, be open to a similar objection; practically, they are useful. It is probable that the general principles which regulate our treatment should, in the present state of the excito-motory hypothesis, be paramount in the application of remedies.

XIII. MEMOIRS ON SOME PRINCIPLES OF PATHOLOGY IN THE NERVOUS SYSTEM. By MARSHALL HALL, M.D. F.R.S. &c.

Anything which falls from Dr. Hall on the subject of the nervous system deserves and will receive attention. The memoir before us is on the—

Condition of the Muscular Irritability in Paralytic Limbs.

Dr. Hall observes—

"The utmost discrepancy of opinion prevails amongst physiologists and medical writers upon this subject. Prochaska, Nysten, and Legallois state, that the irritability of the muscular fibre remains in paralytic limbs; whilst Professor Müller and Dr. Sticker assert the contrary. No attempt has been made to reconcile a contradiction not very honorable to our science. To explain this discrepancy of opinion is one of the objects of this communication.

The authors to whom I have referred, misled by the generic term and idea of paralysis, have not sufficiently distinguished between its different species. Yet it will be found, as we proceed, that this distinction is of the utmost importance in the explanation of the phenomena. In fact, cerebral paralysis, or that which removes the influence of the brain, and spinal paralysis, or that which removes the influence of the spinal marrow, are in totally opposite conditions in reference to the irritability of the muscular fibre in the limbs severally affected; facts equally obvious in experiments and in clinical observations." 192.

After quoting the experiments and the opinions of Nysten, Prochaska, Fouquier, and Müller, Dr. Hall dwells on the fact that the convulsive movements occasioned by strychnine are frequently first displayed by the paralytic limbs.

"I figured to myself the fact of the strychnine acting on the spinal marrow, and diffusing its power equally along the nerves, to the right hand and to the left, to the muscles to which they proceed respectively; and I asked myself the question—Is the difference observed in its ultimate effects on those muscles, the power being obviously the same, owing to a difference in the degree of the irritability of the muscular fibre itself? Is the irritability of that fibre actually augmented? If so, the phenomenon would be explained!

I waited with anxiety for opportunities of submitting this question to the decision of experiment. This I entrusted, in the first instance, to my young friend and intelligent pupil Mr. Dolman. The result was as I anticipated. A little child, aged two years, was perfectly paralytic of the left arm. The slightest shock of galvanism was directed to be applied which should produce an obvious effect. It was uniformly observed that the paralytic limb was agitated by a degree of galvanic energy which produced no effect on the healthy limb.

A similar patient, with paralysis of one leg, was subjected to the same experiment by my friend and former pupil Mr. W. F. Barlow, and with the same result.

I repeated the trial on several patients affected with hemiplegia, at my own house, uniformly with the same event; the paralytic limbs were always moved by an influence which was lower than that required to affect the healthy limb, or if both limbs were agitated, it was uniformly the paralytic limb which was more shaken than the other.

I next repeated my observations upon a more extensive scale, at the St. Mary-le-bone and St. Pancras infirmaries. There were two exceptions to the rule; whilst the numbers in which the phenomena already described were observed, were considerable." 201.

Dr. Hall next details some experiments performed by himself. They were made on six frogs. He divided the spinal marrow immediately below the origin of the brachial plexus, and removed a portion of the sciatic nerve of the right posterior extremity. The following were the results.

1st.. The anterior extremities alone were moved spontaneously; both posterior extremities remaining entirely motionless, when the animal, placed on its back, made ineffectual efforts to turn on the abdomen.

2nd. Although perfectly paralytic in regard to spontaneous motion, the left posterior extremity, that still in connexion with the spinal marrow, moved very energetically when stimulated by pinching the toes with the forceps.

3rd. The right posterior extremity, or that of which the ischiatic nerve was divided, was entirely paralytic, both in reference to spontaneous and excited motions.

4th. After the lapse of several weeks, whilst the muscular irritability of the left posterior extremity was gradually augmented, that of the right was gradually diminished, phenomena observed when the animal was placed in water, through which a slight galvanic shock was passed accurately in the direction of the mesial plane.

"In this interesting experiment," says Dr. Hall, "we have, then, first the phenomena of loss of spontaneous motion on removing the influence of the brain, the excited or reflex actions remaining; and the loss of these on removing the influence of the spinal marrow; secondly, in the case of mere cerebral paralysis, we have augmented irritability, and in that of the spinal marrow we have the gradual diminution of this property." 202.

5th. Strychnine being now administered, the anterior extremities and the left posterior extremity, or that still in connexion with the spinal marrow, became affected with tetanus; but the right posterior extremity, or that severed from all nervous connexion with the spinal marrow, remained perfectly flaccid.

6th. Lastly, the difference in the degree of irritability in the muscular fibre of the two limbs was observed when these were entirely separated from the rest of the animal.

"In a word," adds our talented author, "the muscles of the limb paralysed by its separation from both cerebrum and spinal marrow, had lost their irritability; whilst those of the limb separated from its connection with the cerebrum only, but left in its connection with the spinal marrow, not only retained their irritability, but probably possessed it in an augmented degree. The next question came to be,—Do these phenomena obtain in the human frame? I visited a patient affected with hemiplegia, including paralysis of the face, and I passed a slight galvanic shock through two pieces of metal, of which one was placed over each cheek. The muscles of the paralytic side were

most affected. I repeated the experiment with the same result. I now compared with these, two cases of injury of the facial nerve, passing the galvanic shock in the same manner, through the fibres of the orbicularis; it was now the muscle of the healthy side which was affected by the galvanism, the eyelid of that side being closed, whilst that of the paralytic side gaped as before. I next compared the effect of galvanism in two cases of complete paralysis of the arm, one hemiplegic, the other the result of dislocation of the shoulder. The muscles of the former were more, those of the latter less, irritable than those of the healthy arm respectively, as were also those of the arm of a patient affected with the paralysis induced by lead. Lastly, I compared the cases of paralysis of the lower extremities, one arising after pertussis, and therefore cerebral, the other, I think, from disease within the lumbar vertebræ; in the former there was augmented, in the latter, diminished, irritability.

By means of these experiments and observations we are enabled, I believe, to explain all the apparent discrepancies between the statements of former authors, and between each of them and my own.

The observations of Nysten, and others, determined that the irritability of the muscular fibre still existed in ordinary hemiplegia; but they did not extend far enough to determine the comparative degree of irritability of the paralytic and of the healthy limbs, or the question whether, in the former, the irritability was diminished—the event probably expected—or augmented, a result, I believe, never anticipated.

Prochaska and Nysten and Legallois failed in their experiments, too, by not allowing time for the change in the condition of the irritability of the muscular fibre to take place.

Professor Müller and Dr. Sticker, on the other hand, did not distinguish between paralysis arising from separation from the cerebrum merely, and paralysis arising from separation from the spinal marrow, a distinction of the utmost importance in every point of view, and that which explains the phenomenon under discussion. The term paralysis has been used by all the authors whom I have quoted, in too general a sense. This is so true that I may affirm that in one kind of paralysis, that which removes the influence of the cerebrum, and which is therefore paralysis of spontaneous or voluntary motion, there is augmented irritability; whereas, in the other, that which severs the influence of the spinal marrow, the irritability is diminished or even annihilated.

We may conclude that, in cerebral paralysis, the irritability of the muscular fibre becomes augmented, from want of the application of the stimulus of volition; in paralysis arising from disease of the spinal marrow and its nerves, this irritability is diminished, and at length becomes extinct, from its source being cut off.

We may further deduce, from the facts which have been detailed, that the spinal marrow, and not the cerebrum, is the special source of the power in the nerves of exciting muscular contraction, and of the irritability of the muscular fibre; that the cerebrum is, on the contrary, the exhauster, through its acts of volition, of the muscular irritability.

As a further deduction from the same facts, we may infer the diagnosis between cerebral and spinal paralysis; mere cerebral paralysis is attended by augmented irritability, whereas spinal paralysis is that which is attended by diminished irritability. The fact will prove useful in many obscure cases." 206.

There can be no doubt of the value of these facts if they should be completely established. Dr. Hall observes, that the principle they establish explains a whole series of phenomena. And first, he says, the exception to the rule of augmented muscular irritability in paralytic limbs, is obviously dependent upon its existing in the cases of paralysis from the severed influence of the spinal marrow, as distinguished from those arising from the severed influence of the cerebrum merely.

Secondly, we understand at once why the influence of strychnine is first, and most, seen in cerebral paralysis, in the paralytic limbs.

But Dr. Hall brings some other points before our notice.

The first of these is the influence of emotion in paralytic limbs.

The second is the similar influence of certain acts of respiration; as yawning, sneezing, coughing, &c.

The third, the similar influence of the tonic power.

"It must have occurred to us all to observe the influence of surprise or agitation, on the arm and hand, and perhaps on the leg, of a patient long affected by hemiplegia, whilst the limbs of the healthy side remained unaffected. In this case the influence of the emotion is, like that of strychnine in the case formerly discussed, exerted equally upon the limbs of both sides; but it is the muscles of the paralytic limbs which are most irritable, most susceptible of the the stimulus; it is therefore these limbs which are most convulsively affected.

The same phenomenon is not observed in paraplegia, because the influence of the emotion is cut off from the affected limbs." 207.

He gives this case.

Case.—Dr. Hall was called to a patient a short period ago, affected at that moment with bronchitis. He was forty-three years of age; and at the age of twenty-four had been seized with hemiplegia. Recovering from the immediate danger of the attack, he remained hemiplegic, scarcely regaining the use of the hand and arm at all, and only partially that of the leg.

Whenever this patient is excited by meeting an acquaintance, or in any similar way, he has a little strabismus, and the hand and arm are contracted and convulsed in the most extraordinary manner; whenever he coughs, the leg is thrown involuntarily upwards. The arm is severed, as it were, from volition, but affected by emotion.

And Dr. Hall quotes another case communicated by Dr. Abercrombie to the late Mr. Shaw.

"'I had some time ago under my care, a man affected with hemiplegia of the left side; the palsy complete, without the least attempt at motion, except under the following circumstances; he was very much affected with yawning, and every time he yawned the paralytic arm was raised up, with a firm steady motion, until it was at right angles with his body (as he lay in bed on his back), the fore-arm a little bent inwards, so that his hand was above his forehead at its greatest elevation. The arm was raised steadily during the inspiration, and when the expiration began seemed to drop down by its own weight, with considerable force. He continued liable to the affection for a considerable time, and it ceased gradually as he began to recover the natural motion of the limb.' That is, as I conclude, as the state of augmented irritability was removed by the returning acts of volition." 208.

Not less interesting, continues our author, are the effects of the tonic power. In cases of hemiplegia of long duration, the paralytic limbs, but especially the arms and hands, are drawn into a state of chronic, rigid, contraction. This phenomenon is owing to the principle of tone constantly acting upon muscles now possessing augmented irritability, whilst they are never, or rarely, relaxed by acts of volition.

A similar effect is seen in idiots born with atrophied cerebrum; the in-

fluence of volition is wanting; that of the spinal marrow, the source, at once of the tone and of the irritability of the muscular system, is in constant action, and induces chronic contraction, an effect which must, however, be distinguished from that of spasm, which is excited immediately by some disease of the spinal marrow itself.

Dr. Hall introduces eight other cases with the following remarks:—

"I may now resume the subject of the action of strychnine on paralytic limbs. It is obvious that the generalization of M. Fouquier, M. Ségalas, and others, that the strychnine attacks the paralytic rather than the healthy limbs, was too hasty. This is only true in those cases of paralysis in which the muscles still remain in nervous connexion with the spinal marrow; the opposite result is observed in those other cases in which such connection between the muscles and the spinal marrow is intercepted.

I would here make another observation. The arms and hands, generally speaking, are more under the influence of the cerebrum than the lower extremities; and these, on the other hand, are more under the influence of the spinal marrow than the arms and hands. The superior extremities are more and more frequently affected by hemiplegia than the inferior; these are more influenced by tetanus, by strychnine, &c., than the former, a fact which I have observed, in regard to strychnine, in some cases of hemiplegia. These facts must be borne in mind in making our observations.

Another circumstance must also be noticed. The more perfect the paralysis, generally speaking, the more the irritability of the muscular fibre is augmented. In hemiplegia, the arm is generally at once more paralytic and more irritable than the leg. In chronic cases, however, the irritability becomes impaired, together with the nutrition." 210.

And, finally, Dr. Hall concludes:—

"1st. That the spinal marrow, exclusive of the cerebrum, is the source of the muscular irritability:

2nd. That the cerebrum is, in its acts of volition, an exhauster of that irritability:

3rd. That in muscles separated from their nervous connexion with the brain, we have augmented irritability:

4th. That, in muscles separated from their nervous connexion with the spinal marrow, we have on the contrary, diminished irritability:

5th. That the degree of the irritability of the muscular fibre of paralytic limbs, compared with that of the muscles of the healthy limbs, will afford us a source of diagnosis between cerebral and spinal paralysis, and especially between

§ 1. Hemiplegia of the face, and
§ 2. Paralysis of the facial nerve;
§ 3. Hemiplegia of the arm or leg, and
§ 4. Disease of the nerves of these limbs:*
§ 5. Disease of the spinal marrow in the dorsal region, and
§ 6. Disease of the cauda equina in the lumbar region, &c.

6th. That the greater influence of emotion, of certain respiratory acts, of the principle of tone, &c., on the muscles of certain paralytic limbs, than on those of healthy limbs depends, on their augmented irritability:

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* "In disease of the cervical vertebræ, the arms are sometimes paralyzed without paralysis of the legs; this probably arises from compression of the brachial plexus. See Sir B. Brodie's paper in the transactions of this Society, vol. xx. p. 130; the galvanic trough would determine the question:"

7th. That the same principle explains the greater susceptibility of the muscles in certain cases of paralytic limbs, to the influence of strychnine.

8th. That, in the conclusions of M. Fouquier, Professor Müller, &c., a sufficient distinction was not made between the influence of the cerebrum and of the spinal marrow, which in this, as in so many other respects, have such different properties.

9th. From these, and other experiments and observations, I conclude, too, that sleep restores the irritability of the muscular system, by arresting the acts of volition, which exhaust or diminish it; muscular efforts, on the other hand, diminish the irritability and induce fatigue." 217.

Undoubtedly a valuable memoir.

XIV.—Case of Fracture of the Coracoid Process of the Scapula, with Partial Dislocation of the Humerus forwards, and Fracture of the Acromion Process of the Clavicle. By John F. South, Assistant Surgeon to St. Thomas's Hospital.

Mr. South publishes this case because the occurrence of such an accident has been doubted, and no dissection of it, so far as he knows, has been made.

A painter, aged 58, was admitted into St. Thomas's Hospital, at 7 p. m. April 12, 1838, having fallen from a height of 30 feet.

There was a scalp wound and bleeding from the left ear, and a compound fracture of the olecranon opening into the joint.

"The arm hung closely to the side, and at first I did not observe any injury of the shoulder; but being informed that the surgeon who had sent him to the hospital thought there was dislocation at that joint, I examined it more carefully, and on rotating the arm, felt crepitus, which I considered to arise from the motions of the broken ulnar being transferred to the humerus. However, not being satisfied on this point, I fixed the olecranon, and then looking more closely at the shoulder, observed a depression below and behind the acromion, which led me to suppose some displacement of the head of the humerus or fracture of the neck of the scapula, but still the roundness of the shoulder was not lost. I then put my hand on the shoulder, and endeavored to grasp the neck of the scapula with my thumb and finger, (the former being in the axilla.) and commenced gentle rotation of the arm, when immediately and unexpectedly I felt the head of the humerus move backwards, and the appearance of pit ceased. I then began to arrange the elbow, and whilst doing this the humerus again slipped out, the same appearance of depression behind it and below and behind the acromion was re-produced; and I also observed there was preternatural prominence and roundness of the front of the shoulder. I therefore supposed it to be dislocation under the clavicle, of the same kind, though not to the same extent, as the so-called dislocation under the pectoral muscle, but which is really rather under the inner edge of the deltoid than under the pectoral muscle.

For the fracture at the elbow-joint a long, well-padded splint was placed on the front of the limb, to which the fore-arm was connected nearly as high as the elbow by another, and the upper arm in a similar manner, but less tightly, from a little above the joint nearly to the axilla. The edges of the wound were brought together with two adhesive straps, and the plaister varnished with sealing-wax, after Mr. Abernethy's plan, so as to allow the application of an evaporating lotion without the straps being loosened.

The dislocated head of the humerus was now again replaced, merely by lifting the neck outwards with the thumb and rotating the arm: its return was this time indicated by a grating noise, which was heard by the bystanders. A large pad of tow was put in the armpit, and confined there by a bandage tied upon the opposite side of the neck, and a second bandage passed round the belly, and including the fore-arm, brought the band near to the trunk, whilst the head of the humerus was kept up by the pad in the axilla." 105.

We may venture, we think, to make one observation. The facility with which the head of the humerus slipped forwards under the inner edge of the deltoid and back again, might direct attention to the coracoid process. The integrity, or otherwise, of *that*, is usually distinguishable, without much difficulty; for, by firm pressure below the clavicle, the process itself may be, in general, felt with ease, and subjected to examination.

In the night of the 16th, cough and vomiting came on; the vomiting continued, and at 4 a. m. of the 17th, he died.

Examination of the Shoulder.

"On turning off the integuments, a small quantity of effused blood was found on the front of the shoulder, and to my surprise, a fracture of the clavicle, about a third of its length from the acromial extremity, with, however, but little displacement. The clavicle was then disarticulated from the sternum, and, together with the scapula and part of the humerus with their muscles, removed from the body and carefully examined. The acromion was broken at the usual place, about an inch from its extremity, but not at all displaced, as the periosteum had not been lacerated.

When the deltoid muscle had been turned off from its clavicular origin, the coracoid process of the scapula was found broken about half an inch from its tip, into two unequal pieces, the smaller of which remained connected above with a piece of the triangular ligament still attached to the acromion, and below to the short head of the biceps muscle, which had pulled it down as far as the ligament would allow, about half an inch below and to the outer side of the stump of the coracoid process. This muscle was torn from the coracobrachialis about an inch; and to the top of the conjoined tendon of the latter, and of the lesser pectoral muscle, was attached the larger portion of the broken coracoid process, which had been drawn rather lower than the other portion, and to the inner side, but was still connected by a thin cord of fibrous matter to the coracoid process. The remainder of the triangular ligament was torn to pieces. In the front of the capsule of the joint was a slit about an inch in length, through which the cartilaginous covering of the head of the humerus was seen glistening. The remaining origin of the deltoid was divided, and the muscle turned down and cut off, which exhibited the head of the bone in its proper position.

Being anxious, if possible, to reproduce the same state of the shoulder as when I first saw him, in order to comprehend the extent of the displacement, I moved the humerus about in various directions, when at last, by lifting up the shaft and pressing the head of the humerus forwards, I effected my purpose; the preternatural roundness in front of the acromion being produced by the head of the humerus being partially thrown forwards and over the front edge of the glenoid cavity, so that it became fixed, and behind it the depression below the acromion appearing, in consequence of the sinking of the tendons of the infraspinatus and teres minor muscles into the glenoid cavity, from the altered position of the head of the bone, which, however, did not protrude through the slit in the capsule, although it was there more distinctly visible. No other laceration of the tendons about the joint had occurred, except a very slight tearing of the tendon of the supraspinatus muscle. Nor was there any other fracture of bone." 106.

Mr. South, among other observations, makes the following:—

"As to the partial dislocation of the humerus, it is an accident which I have often heard mentioned, but till the examination of the present case have scarcely deemed possible. Indeed, even in this, during life, I did not suppose it existed; and I still think that it could not have occurred without great laxity of the capsular ligament, and without the fracture of the coracoid process. I believe that the existence of the latter injury was necessary to allow the partial dislocation of the head of the humerus forwards; for had the coracoid process remained unbroken, I cannot imagine how the head of the membrane could have slipped so far before the glenoid cavity, as to allow of its being fixed in the position in which I found it when I first saw the patient, and to which I returned it after death." 107.

"I would wish, however, to state, that I do not consider the present case as offering any proof of the possibility of such accident as partial dislocation of the head of the humerus, unless, as in this instance, there be fracture of the coracoid process. For the disposition of that process is not merely as a protection against injury to the front of the joint, but it precludes the head of the humerus being projected so far before the edge of the glenoid cavity as to put it in a situation from which it cannot and must not be immediately withdrawn by the slightest action of either of the muscles attached to the tubercles. Whilst, on the contrary, if the head of the bone be driven backwards, it must be either so completely thrown from the glenoid cavity, as to produce dislocation on the dorsum, or so trifling, that it is but for a moment slightly displaced, and reverts to its natural place so soon as the impelling force is removed." 109.

The surgical world is under obligations to Mr. South for communicating this case.

XV. Memoir on Tuphlo-enteritis; or Inflammation and Perforative Ulceration of the Cæcum, and of the Appendix Vermiformis Cæci. By John Burne, M.D. Physician to the Westminster Hospital, &c.

Since Dr. Burne laid before the Society, in May, 1836, an article on the Inflammation and Perforative Ulceration of the Cæcum and of the Appendix Vermiformis Cæci, he has seen more of these cases, and acquired additional information respecting them.

"The peculiarity," says Dr. Burne, "in the organization of the cæcum, which bears upon the present subject, is the absence of a peritoneal tunic at its posterior part, where it is fixed and attached by adipose cellular tissue to the iliac fascia, so that in the event of a perforative ulceration in this direction an abscess would form behind, and without the peritoneum upon the iliac fascia, and direct its course to the lumbar region at the outer edge of the quadratus lumborum muscle, as described in the former memoir.

Now of the whole tract of the large intestine, no part is so exposed to the lodgment of undigested substances as the cæcum, owing to its particular conformation, as well as to its being the portion of the large intestine with which the undigested substance comes first in contact. These circumstances, strengthened by the fact that many of the patients attacked with inflammation of the cæcum remember to have swallowed accidentally, or to have taken as part of their ordinary food, matters likely to pass the stomach in an undigested crude state, admit of the conclusion, that the greater number of the cases of inflammation of the cæcum are to be ascribed to the prolonged irritation of bodies so lodged, and that such inflammations are therefore properly symptomatic; a con-

clusion borne out, moreover, by the manner of attack, which is characterized by the development of the local preceding that of the general symptoms, and by the absence of the chills and rigors, which usher in idiopathic inflammation. The inflammation is developed slowly in one person, speedily in another, owing to the greater or less susceptibility and inflammatory predisposition of the individual. The inflammation of the cæcum may be idiopathic, and arise from the ordinary exciting causes, cold and vicissitudes of the weather, there can be no doubt; though the instances are rare in comparison with those which may be fairly attributed to the irritation of crude substances, which have reached the cæcum and lodged in its pouch.

The termination of this symptomatic inflammation of the cæcum is usually by resolution; the symptoms yielding at the end of five or six days, and subsiding altogether soon afterwards; except in patients of an inflammatory or gouty diathesis, in whom inflammation once excited will continue in a sub-acuto-chronic form, and require several weeks for its removal, notwithstanding the original exciting cause shall have passed away. The termination by perforative ulceration and abscess is rare, and probably never occurs when the cæcum was sound prior to the attack; the open channel of the colon permitting the passage of the irritating body, as soon as the subsidence of the spasm and the removal of the inflammation allow the muscular tunic of the cæcum to resume its function. No instance has come within my observation in which, upon dissection, perforative ulceration of the cæcum has been found: all the cases of inflammation of the cæcum and of supposed perforation, within my knowledge, having recovered; and, in the cases on record, there is evidence of disease in this gut having existed previously." 36.

Dr. Burne relates seven cases. The first, one of sub-acute tuphlo-enteritis,—the second, of acute tuphlo-enteritis—the third, of enlargement of the appendix; sero-enteritis originating in the peritoneal tunic of the appendix —the fourth, of concretions in the appendix vermiformis cæci, pelvic abscess and peritonitis; the appendix being situated in the pelvis—the fifth, of perforative ulceration of the appendix vermiformis cæci; abscess discharged by the bowels; recovery—the sixth, of perforative ulceration of the appendix vermiformis cæci, from a concretion lodged in its canal; peritonitis; death —the seventh, of perforative ulceration of the appendix vermiformis cæci; circumscribed abscess; death; unusual situation of the appendix.

These cases are all possessed of interest, and tend to exhibit the main features of the affection. But we cannot afford space for their details, and pass to the observations which follow them.

The varieties of disease, says Dr. Burne, in the present and former memoirs consist of:—

1. Inflammation, acute or sub-acute, of the cæcum, terminating quickly or slowly in resolution, or lingering on and leading to permanent organic impairment.

2. Perforative ulceration of the cæcum from within, with abscess behind the peritoneum, pointing externally in the corresponding lumbar, or inguinal region, or in both.

3. Inflammation of the appendix, spreading over the peritoneum.

4. Perforative ulceration of the appendix, with consequent universal peritonitis, ending rapidly in death; or with circumscribed peritonitis and abscess within the peritoneum, sometimes ending in death in the course of ten days, or, life being preserved, bursting eventually into the cæcum, and discharging itself by the rectum, or directing its course to the surface of the

body, and pointing in the right lumbar or inguinal region. If the appendix happen to be situated anormally, then the locality of the abscess, always within the peritoneum, is determined accordingly; as also is the direction it takes, or in which it points.

Dr. Burne adds:—

"On referring to the Leçons Orales of Dupuytren, and to the article of Mr. Ferral, on Phlegmonous Tumours, in the right iliac region, I find that neither of these authors have spoken of the appendix. The greater number of cases detailed by Dupuytren as original phlegmonous tumours and abscesses in the right iliac fossa, appear to have been cases of perforative ulceration of the appendix, the tumours and abscesses being consequent on this perforation, and not original. The appendix, indeed, seems to have been overlooked in the necrotomy, no mention being made of it It has also been overlooked by others, under similar circumstances; by Ferral, Menière, Husson, and Dance, and it is the pathological error which has resulted that gives an especial interest to the subject." 59.

After criticising the opinions of Dupuytren, that inflammation of the right iliac fossa depends on the presence of irritating matters in the cæcum—and the *pendent* opinion of M. Menière, that it results from the extension of inflammatory action from the mucous membrane to the cellular, Dr. Burne, goes on to remark that Dupuytren, Menière, Husson, and Dance appear to him to have confounded together the four varieties of disease above set down, and have mistaken them for a primary inflammation and abscess of the subcæcal tissue; while the abscess itself is secondary, is only a stage or symptom, and results from the perforative ulceration either of the cæcum or of the appendix.

Speaking of the tumor which occurs in the right iliac fossa, Dr. Burne says that he has no difficulty in assigning as its causes:—

1st. Collection of fæcal matter in the cæcum.

2nd. The presence of any crude, undigested substance, of worms, concretions, or other foreign bodies.

3rd. Inflammation of the cæcum, resulting from the irritation of the above.

4th. Chronic disease of the cæcum, as in cases III. and IV. of my former memoir.

5th. Abscess from perforative ulceration either of the cæcum, or of the appendix.

In reference to diagnosis, Dr. Burne concludes that it is not difficult to distinguish the cæcum and appendix cases from other diseases, although it is by no means easy to distinguish the varieties from one another. He offers the following suggestions on this head:—

"The inflammation of the cæcum, tuphlo-enteritis, the most frequent variety, is distinguished by the sudden attack, the patient having been in health previously; by the local signs fixed in the right iliac fossa; by vomiting and obstinate constipation; and by all these signs being effectually relieved, or passing entirely away as soon as a free action of the bowels can be procured. This variety is the least dangerous.

The perforative ulceration of the cæcum, which is comparatively rare, may be suspected when a patient, who has been in ill health, and labouring under bowel complaints for some time, is seized suddenly with the local signs fixed in the right iliac fossa, together with constipation and vomiting; the local signs con-

tinuing to persist in all their urgency, notwithstandig the constipation shall be overcome, and the free action of the bowels re-established. Later it will be distinguished by abscess without the peritoneum, pointing in the right groin, or in the right lumbar region, at the outer edge of the quadratus lumborum muscle: the tumour of the abscess being not unfrequently emphysematous.

Ulceration of the mucous membrane, as indicated by the bowel complaints, is a pre-existing condition of the cæcum, and invading eventually the other tunics, perforates the cæcum at its posterior part, where it is devoid of peritoneal tunic; hence the inflammation and abscess of the sub-cæcal tissue, which give rise to all the phenomena of phlegmonous tumours, or abscesses in the right iliac fossa. Perforative ulceration of the anterior or lateral parts of the cæcum, covered by peritoneum, rarely happens. I am not acquainted with any case of this description, as proved by dissection. It would necessarily excite peritonitis, which, if circumscribed, would lead to abscess; if universal, would speedily destroy life. These characteristics render the distinction between the perforative ulceration, and the simple ulceration of the cæcum very obvious.

The inflammation of the appendix is very rare, one case only having occurred in my experience. It was confined to the serous tunic, and presented the signs of circumscribed idiopathic peritonitis.

The perforative ulceration of the appendix is next in frequency to the inflammation of the cæcum, being certainly much more common than perforation of the cæcum. This variety may be suspected by the more or less sudden development of the local signs, always severe; by their being fixed in the right iliac fossa, and not preceded by bowel complaints, or ill health; by the supervention of vomiting and constipation, the constipation yielding readily to medicine, yet, having yielded, no amendment following; by the great tension in the ilio-inguinal region, there being always a circumscribed peritonitis and abscess within the peritoneum; by the sympathetic tenderness of the whole abdomen; and, subsequently, by the occurrence of diarrhœa, and a discharge of pus by the rectum, followed by subsidence of the tumour, and amelioration of all the symptoms; or, by the pointing of the abscess in the form of an emphysematous tumour in the lumbar-inguinal, or ilio-inguinal regions.

The peritonitis, excited at the moment of the perforation of the appendix, will not unfrequently spread rapidly and universally over the peritoneum, and destroy life in from twelve to twenty-four hours.

The absolute perforation of the appendix is preceded by ulceration of the mucous membrane of some standing not resulting from disease of the intestinal canal, but produced by the accidental presence and infraction of some small foreign body; hence bowel complaints do not usually precede the perforation of the appendix.

The perforation of the appendix has many symptoms in common with the perforation of the cæcum. The perforation of the cæcum, however, is generally preceded for weeks or months by bowel complaints, indicating ulceration of the mucous membrane; while the perforation of the appendix is not preceded by such bowel complaints; a difference in the state of the canal prior to the occurrence of the perforation which aids materially in establishing the diagnosis." 68.

And Dr. Burne completes his interesting memoir by the following

Analysis of Twenty-one Cases.

Mortality: 13 recovered; 8 died.

Character: 19 acute: 2 chronic.

Varieties: 11 were inflammation of the cæcum—all recovered.

2 were chronic disease of the cæcum—both died.

1 was ulcerative perforation of the cæcum from within, with abscess externally—recovered.

1 was inflammation of the appendix, with circumscribed peritonitis—died.
6 were ulcerative perforation of the appendix—five died, one recovered.

Of the five fatal cases of perforative ulceration of the appendix, one died of diffuse peritonitis in about sixty hours; one of peritonitis, and circumscribed abscess in the peritoneum, in nine days; one of circumscribed peritonitis, and abscess in the peritoneum, in twelve days; one of circumscribed abscess in the peritoneum, in four weeks; and one of abscess in the peritoneum, pointing to the right ilio-lumbar region, in eleven days.

The one which recovered was a circumscribed abscess in the peritoneum, bursting into the cæcum.

Age,—Two under ten years of age; seven between ten and twenty; three between twenty and thirty; six between thirty and fifty; three between fifty and seventy.

Sex,—Sixteen were males; five were females.

Occupation,—Six were gentlemen; one was a coachman; one a farrier; five were boys having no particular occupation; three were destitute; five were females having no particular occupation.

Season,—In the autumn and beginning of winter, more frequently.

Dupuytren, from the analysis of sixteen cases, infers that they occur at the end of summer and beginning of winter more frequently; that age has an incontestible influence, eleven out of the sixteen having been under thirty years of age; that men are more liable than women; and that a greater liability applies to trades, as painters, colour-grinders, and turners in copper.

The inferences from this analysis are borne out by the foregoing in so far as relates to sex and season. They differ in some degree as relates to age; and entirely as relates to the liability of particular trades.

In the twenty-one cases the age varied from six to seventy years; the number under thirty being twelve, viz., four-sevenths of the whole; while Dupuytren's rather exceed two-thirds. The greater susceptibility of the alimentary canal in young persons would predispose them to inflammation of the cæcum, from the irritation of crude, undigested substances, and give a preponderance of cases under the middle age. The liability of particular trades, Dr. B. believes to be fallacious. The twenty-one cases having occurred in persons wholly unconnected with trade. Indeed, the causes being accidental, and having no relation to occupation, leave no ground for the supposition that the kind of trade can be instrumental in producing the various affections of the cæcum and appendix.

XVI. On the Softening of Coagulated Fibrine. By George Gulliver, F.R.S. Assistant Surgeon to the Royal Regiment of Horse Guards.

Mr. Gulliver's object may be best described in his own words:—

"The nature of many of the albuminous morbid products affords an extremely interesting subject for further inquiry, since it is probable that a great step in the advancement of pathology may be dependent on the acquisition of a more precise knowledge of their distinctive characters. Although these matters differ most remarkably in their consequences, and are apparently developed in the living body under conditions essentially distinct,—seeing that they have pro-

perties more or less analogous to those of albumen—M. Andral, and most of the pathologists of the French school, have earnestly insisted on this analogy, with the view of informing us, that the substances in question are nothing but a modification of one of the proximate principles of the blood. It is possible, however, that this kind of generalization may be premature, and it seems doubtful whether, by attaching too exclusive an importance to rather vague generic characters, it may not have tended to retard that more particular examination of these substances, still so essential to a satisfactory knowledge of their intimate constitution; for, in the present state of the pathological science, it is with their specific differences that we require to become acquainted; and their affinity to albumen, and common points of resemblance, so far from leading us to this desirable end, present the greatest difficulty in the investigation.

Of all these products, from its constituting one of the most frequent elementary forms of disease, pus is the most important; and as various matters have been comprised under this denomination, some investigation of their peculiar properties would appear to be necessary. Hence any contribution towards this object will not perhaps be altogether unacceptable, and I therefore beg to submit to the Society a narrative of some experiments and observations from which it may be concluded that a fluid which has generally been described as purulent is, notwithstanding, of an essentially different nature. I have elsewhere mentioned incidentally that this matter is softened fibrine, and I now adduce the evidence on which that opinion was founded, together with such remarks as may appear necessary by way of illustration." 138.

Mr. Gulliver relates seven experiments on the concoction of fibrine—four cases of softened fibrine in the heart and arteries—and five cases of softened fibrine in the veins. We shall quote:—

1. *Concoction of Fibrine.*

Experiment 1.—A clot of fibrine, such as is so often found there after death, was taken from the heart, and carefully secured in a perfectly clean portion of small intestine turned inside out, so that the fibrine was in contact only with the peritoneal surface of the gut. It was then placed in a water-bath, and kept for forty-three hours at a temperature varying from 96 to 104 degrees, when the fibrine was found to have become partially softened, particularly in some places towards the centre. It had rather an offensive, though not at all a putrid odor, and no ammoniacal gas appeared to be emitted from it, judging from the test of muriatic acid.

About a drachm of the softened fibrine was collected for examination.—It could not have been distinguished from pus either by its colour and consistency, or by the facility with which it was miscible with water; it was not rendered ropy by caustic volatile alkali, and presented no irridescence when passed between plates of glass before a candle in the manner pointed out by Dr. Young. Subjected to the microscope, the fluid was found to be loaded with particles extremely variable in size and form: some appeared very dense, others were flaky and larger than pus globules, but the greater number were smaller, extremely irregular in shape, not at all globular, like pus, but consisting of very minutely granular masses, and a few rounded particles about half the diameter of those of the blood were observed. On the addition of acetic acid all the particles soon disappeared, except a few which seemed more compact and required a longer time for solution.—Treated with sulphurous acid, they swelled considerably, and became nearly invisible. Some of the softened fibrine was put into a small vial of water,

a similar quantity of the clotted fibrine which had not been concocted being in like manner placed in another vial. Both were set aside for four days, the temperature of the air at the time ranging from 60° to 74°, when the mixture with the concocted fibrine was but very faintly putrescent, and that in the other bottle highly so.

Experiment vi.—Some of the fibrinous concretion formed, in consequence of inflammation, on the pleura of a dog, was confined in a glass tube, and subjected to a blood-heat for eighty-four hours, when it was found to be throughout softened, and presenting just the color and consistency of pus, from which however it was easily distinguishable by the characters noticed in the other trials.

2. *Softened Fibrine in the Heart and Aorta.*

Case 2.—J. Cowan, 56th regiment, aged 29, died of pulmonary consumption. Some fibrinous clots were found among the fleshy columns of both ventricles, similar concretions of smaller size were attached to the inner membrane of the descending aorta, and some of the smaller branches of the pulmonary artery were filled with coagula. All these clots were more or less softened in the centre, the surfaces of those in the heart and aorta being toughish and cyst-like. The matter resembled pus in colour and consistency, but differed from it in being composed of very irregular particles and a few extremely minute globules, all readily soluble in acetic acid, swelling and becoming indefinite under the action of sulphurous acid, and not irridescent when placed before a candle. In short, it was destitute of pus globules, and presented just the same characters as the softened fibrine described in the first experiment.

3. *Softened Fibrine in the Veins.*

Case 8.—Corporal Pat. Long, aged 35, 86th regiment, died of chronic dysentery; the large intestines were ulcerated, but no collections of pus could be detected in any part of the body. The cava, renal, femoral, and saphena veins were completely filled with a clot, which in the former had become softened in the centre, the fluid being of a reddish-brown colour. It was faintly irridescent, and observed under the microscope to be composed principally of very irregular particles, similar in all respects to those of the softened fibrine, but pervaded also by a considerable number of globules, somewhat smaller than those of the blood, pretty regular in size, and rough on the surface. On the addition of acetic acid or carbonate of ammonia they instantly disappeared, and the irregular particles were slowly dissolved in the acid.

The preceding experiment and cases exhibit the chief facts, more circumstantially set forth by the remainder.

Mr. Gulliver observes, that most of the cases which have fallen under his notice of fibrinous pulp in the veins have not presented marks of inflammatory action in the coats of the vessels, such as roughness of the inner membrane from adherent coagulated lymph, or increased vascularity or suppuration in their cellular sheaths. The softening of clots of fibrine appears, indeed, to be independent of inflammation, although this process and its consequences may be expected to occur sooner or later in the neighbourhood, and we may accordingly find true purulent fluid mingled with

the softened fibrine, just as we often observe pus with cancerous and tubercular matter.

It may be observed that the softening of fibrine certainly occurs sometimes without appreciable suppuration in any part of the body. Mr. Gulliver tells us, that he and Dr. Davy have seen such cases, and we may add that we have done so too. The following remarks agree exactly with our own experience, such as it is and so far as it has gone.

"Although the occasional obstruction of the veins by sanguineous coagula, whether softened or not, has become of late years well known from the labours of the continental pathologists, and particularly in this country from several reports of dissections in the magnificent work of Dr. Bright, as well as from the essays of Mr. Arnott, Dr. Geo. Burrows, and Dr. Copeland, my observations lead me to believe that the affection is not only more frequent than is generally supposed, but more concerned in disease, a circumstance to which my attention was first directed by Dr. Davy. Those who have not been in the habit, when examining dead bodies, of accurately attending to this point, would be surprised at the numerous examples of this condition noted in the register of dissections made under his superintendence at Chatham. The clots were in most instances partially whitened and softened in the centre; they were found in the heart, and also adhering to the inner membrane of the aorta; in the veins of the lower limbs, as well as in the cava, portal, and renal veins; in the pulmonary vessels, and in the sinuses of the dura matter. They were chiefly observed in subjects who having long suffered from various chronic maladies, had great prostration of the vital powers, and languor of the circulation during the last days of existence; a state which was also remarkable in the cases related in this paper, and which seems especially favourable to the formation and softening of the clot. If, therefore, a vein becomes obstructed with coagulated blood or fibrine, which cannot easily be absorbed or organized in consequence of the very feeble vitality of the patient, the clot may be expected to soften, and it is accordingly in such cases that the affection may be often found after death, although never suspected during life." 149.

It is impossible to be much in the dead-house of a large hospital, without being struck with the comparative frequency of obstruction in the iliac and femoral veins. And we have found it, as Mr. Gulliver has, in those who die after a lingering illness, or a protracted final struggle, and in whom the circulation for some period before death must have been extremely languid.

Mr. Gulliver continues:—

"On the contrary, when the organic force is active, we know how readily fibrine becomes the seat of new formations, that it will acquire firmness and remain for years in the sac of an aneurism, and that extravasated blood is generally soon absorbed after injuries. In repeating those experiments of M. Gendrin, in which a seton is passed through a clot of blood, either in or out of the vessels, I could only twice succeed, after numerous trials, in producing any thing like pus in the substance of the coagulum. In these instances the animals were greatly reduced from the effect of previous operations, and the matter proved to be nothing more than softened fibrine, such as I have described it. When blood was injected into the subcutaneous cellular tissue, or into the serous cavities, its complete coagulation was retarded for two or three hours, while some of the same blood kept at the animal temperature in a bottle always coagulated in less than eleven minutes. Absorption of the clot took place with great rapidity, and was hardly delayed by passing a seton through it, so that on the second or third day it had nearly disappeared, the threads approaching the skin, where of course pus would be formed independently of the extrava-

sated blood. When two ligatures were so placed on a vein as to include an inch or two of the column of blood, it took about three hours to coagulate perfectly, as Sir Astley Cooper had noticed in his experiments. In two or three days it lost its colouring matter, becoming whitish, tolerably firm, and shrunken. After a seton or a leaden shot was put into the clot, no appearance of a purulent-like fluid was seen towards the centre, although pus was frequently present between the coagulum and lining membrane of the vessel, and still more often in the cellular coat and the neighboring parts.

It may be observed, therefore, that as the doctrines of M. Gendrin concerning suppuration, have been extensively promulgated in almost every work on the subject recently published in this country, the preceding cases are interesting in this respect, since they are of that species to which he attaches so much importance, as proofs of the conversion of clots of fibrine or blood into pus.—However, as Mr. Palmer remarks, M. Gendrin appears to have confounded the fibrine or corpuscles in a manner not consistent with the known constitution of the blood; and although some purulent or other matters may be occasionally mixed with the softened fibrine, still as it results from several observations that the latter is essentially distinct from pus, and constitutes the whole or greater part of the so-called purulent fluid in these cases, it is at least doubtful whether they admit of the inference which M. Gendrin has drawn from them." 151.

Mr. Gulliver adds these conclusions:—

1st That coagulated fibrine, when removed from the body and subjected to a blood-heat, commences to soften in about forty hours, assuming the colour and consistency of pus, but easily distinguishable from it by microscopic and chemical examination.

2nd. That the purulent-like fluid found in the fibrinous clots of the heart and arteries, and so frequently in the veins, is essentially distinct from pus, and analogous to, if not identical with, softened fibrine.

3rd. That the softening of coagulated fibrine is an elementary pathological condition of frequent occurrence, distinct from suppuration, and constituting a considerable proportion of the cases generally denominated suppurative phlebitis.

And he winds up his interesting paper thus:

"Lastly, I may observe, that I have frequently found pus mixed in considerable quantities with the pulpy fibrinous matter; and in two instances some purulent globules were observed, completely insulated, in the centre of a clot, from the neighbouring tissues. But in both these cases pus was also detected in the blood; and when it is considered how frequently this contamination exists, it will not appear surprising that the particles of pus should become entangled in coagula contained in the vessels. Nor does this circumstance at all invalidate the conclusion, that the softening of coagulated fibrine is a disease of much interest and importance, quite distinct in its nature from suppuration, although the two affections have been generally regarded as identical." 152.

We would simply remark that Mr. Gulliver's researches on the presence of pus in the blood are far from being established. There are grave doubts entertained of their correctness.

XVII. CASE OF CARDITIS. By THOMAS SALTER, Esq. of Poole.

Mr. Salter points out the absence of any recorded case of pure carditis,

unaccompanied with inflammation of the pericardium. He relates the following as a not unsatisfactory approach to it.

N. P. Sheppard, aged 50, March 16, 1834. He complained of uneasy sensations in the region of the stomach, and under the sternum, increased by any sort of exertion. The appetite was good, and, the pain not influenced by eating; bowels regular; tongue clean at the edges, but the centre and back parts covered with a thin white coating; pulse natural; countenance pale. On applying the ear to the cardiac region nothing abnormal was discovered.

He states that the symptoms were first observed about six weeks since, whilst walking; that the pain was then at the lower part of the chest, inclining to the left side, and though it did not continue long was remarkably severe, producing faintness and a cold perspiration. About a week subsequent to this he had another severe paroxysm, which occurred immediately after a walk of three miles into the country. The attacks are becoming more frequent, though not always so severe as the first: they now occur occasionally whilst sitting, and even lifting the arm sometimes brings on the pain. Accompanying the pain in the chest there is frequently considerable uneasiness about the middle of the left upper arm. There is no cough or sign of any pulmonary affection. He complains a good deal of flatulence, and says he is made worse by the use of beer. He was directed to take some pills with pil. hydrar. and ext. colocynth every other night, and twice in the day a portion of a mixture containing sulphate of magnesia and carbonate of soda; from the use of these remedies, and a strict attention to regimen, he experienced considerable relief; till early in the morning on Saturday the 22nd, when Mr. S. was hastily called to him.

"I found him sitting up in his bed, being, from great oppression and distress in his breathing, unable to lie down. He placed his hand over the sternum, and said with great earnestness, 'it all lies here.' The pain was not lancinating, but of a dull heavy description; his face was pale, features sharp, and the expression anxious; and he said he felt as if he could not possibly live; pulse 80 and regular; heat of the skin temperate; pain in a slight degree increased by deep breathing; no tenderness at the scrobiculus cordis; feels some relief by raising wind from the stomach; action of the heart seems natural; chest sounds well on percussion, and the respiratory murmur is good.

He was bled to ten ounces, and had a blister applied over the sternum: in the evening there was no remission of the symptoms; his sufferings continuing distressingly severe, and the seat and character of the pain remained unchanged; the pulse had risen in frequency to 120, and was small and weak; on inspiring deeply the pain was but in a slight degree increased; pressure on the intercostal spaces did not produce pain. The respiratory murmur was heard on both sides of the chest, but the anguish of the patient was so great, that it would have been extremely difficult, if not impossible, to have made any very satisfactory local examinations. His sufferings and distress in breathing were at this time so great that he did not appear able to give any precise or intelligible account of his feelings. He was directed to take one grain of opium and four of calomel every three hours." 75.

23d. He has passed a sleepless night, with restlessness and anxiety almost indescribable, frequently getting in and out of bed, and once dressing himself. He has vomited a large quantity of fluid tinged with green bile. He is still constantly obliged to observe the erect position; pulse 130, and so

feeble as scarcely to be felt; sounds of the heart just distinguishable by the stethoscope; surface of the body cool; bowels open; urine in moderate quantity, with sediment. The pain under the sternum is less complained of, but the oppression of the breathing and the anxiety are truly distressing to witness.

In the evening, he complained of pain in the upper and left side of the chest, and beneath the clavicle. He had no sleep during the night, and, on the 24th, the pulse was not to be felt at the wrist; the hands, feet, and legs are cold; the patient continued to suffer greatly during the day, but gradually becoming weaker, he died at eleven o'clock at night, about 65 hours after the accession of the acute symptoms. His mind was unaffected throughout.

Dissection.—In the right pleural cavity there was more than half a pint of serous fluid. Nearly the whole of the left lung was in a state of considerable engorgement, resembling the first stage of pneumonia; it was crepitant, but from the cut surfaces escaped a large quantity of sero-sanguineous fluid, and from one of the cut bronchial tubes a clear fluid was observed to flow, which by pressure was also forced out of the trachea. The capillary and other vessels on the bag of the pericardium were distended with red blood, especially on the left side, exhibiting a beautiful vascularity. That portion of the membrane investing the substance of the heart showed also, by its unusual vascularity, striking evidence of having suffered from inflammation; this, too, was mostly on the left side, that portion covering the left ventricle being its chief seat; but the part of the pericardium which had sustained the most intense vascular disturbance, was that which lies on and is attached to, the diaphragm. Here there was not only a distended state of the capillary and larger vessels, but numerous ecchymosed spots and blotches resembling those observed on the skin in purpura hæmorrhagica. There was no lymphatic, serous, or purulent effusion into the pericardial sac. The heart was somewhat larger than natural, its substance of moderate firmness; large coagula were found in all the cavities; some of these were quite white, others deprived of their red colour, and of a yellowish hue, and adhering with great tenacity to the internal parietes, whilst some portions of the coagula were dark on the outside and bleached within. There were no signs of disease in the lining membrane of the heart or valves. In the ascending aorta there were the appearances of common ossification. The great deviation from the normal condition of the heart was, however, found to be in the muscular substance of the left ventricle; excepting a small portion of a few lines in thickness on either surface, the left ventricle had entirely lost its muscular colour; it was of a lightish yellow hue, but still preserving the fibrous character of muscle. From all the cut surfaces of the various sections which were made, could be scraped purulent matter. In some parts absorption had taken place, leaving small cavities in the muscular substance, varying from the size of a pin's head to that of a small pea; these were all filled with pus. The stomach was large and flaccid, and contained a considerable quantity of fluid. The mucous membrane of the pyloric half was of a dingy red colour, from a spotted vascularity. The liver appeared quite healthy. The jejunum was inflamed, both in its peritoneal and mucous coats, for the greater portion of its length.

The case speaks for itself.

XVIII. ON THE STRUCTURE OF THE CORPUS LUTEUM. By ROBERT LEE, M.D. F.R.S.

Dr. Lee—

Haud sordidus auctor
Naturæ verique,—

Commences his paper by stating *that*, the Graafian vesicle in the human ovarium is a small spherical pellucid sac, which contains a fluid, the ovum, and the granular substance in which it is imbedded. The vesicle itself always consists of two distinct coats or membranous layers, which adhere firmly together. The external surface of the Graafian vesicle adheres loosely to the stroma or proper substance of the ovarium, in which it is imbedded by soft cellular substance, blood-vessels, and nerves.

Soon after impregnation, the coats of the Graafian vesicle and the peritoneum covering it, give way by absorption, the contents of the vesicle escape, and between its outer coat and the substance of the ovary, the corpus luteum is gradually formed.

After quoting the opinions of Baer and Montgomery on the site of the corpus luteum, Dr. Lee details his own researches.

On the 11th of July, 1838, a woman, two months advanced in pregnancy, died of continued fever in St. George's hospital. On the 13th, Dr. Lee examined the left ovarium, which contained the corpus luteum.

"It was larger than the right ovarium, and had a considerable prominence on its convex edge, around which were seen ramifying a number of minute arteries and veins. There was a small circular depression at the point of this prominence, but a bristle could not be made to pass through it into the substance of the ovarium. On cutting open the ovarium, the corpus luteum presented itself of an oval shape and deep orange colour, with a small cyst in its centre, resembling the Graafian vesicle, with its coats thickened and contracted. With little difficulty I succeeded in separating one half of this cyst into two distinct layers which appeared to be the two coats of the Graafian vesicle.

The outer surface of this cyst is so loosely attached by cellular tissue to the corpus luteum, that it can easily be separated from it. The corpus luteum itself varies from a line to a line and a quarter in thickness, and when examined with a magnifier, appears to consist entirely of small yellow globules or particles contained in cellular membrane.

Around the outer surface of the corpus luteum, and completely investing it, there is a white layer varying in thickness, the outer part of which loses itself in the substance of the ovarium, of which it appears to form a part, and to be similar in structure, having the mouths of divided vessels distinctly perceptible, as in other parts of the substance of the ovarium. The inner portion of this white layer, which appears to be condensed stroma, is separable on the one hand from the corpus luteum, and on the other from the substance of the ovarium, so as to give the appearance of a distinct membrane, considerably exceeding in thickness both layers of the Graafian vesicle. Plate VII. fig. 1 exhibits the colour and form of the corpus luteum when first cut open, with the Graafian vesicle in its centre.

The Graafian vesicle is also enclosed within the corpus luteum, in a specimen of Fallopian tube conception of six or seven weeks, in my collection.

In another specimen of more advanced tubal conception, the Graafian vesicle is likewise seen enclosed within the corpus luteum.

The same fact is fully as evident in the preparation of the gravid uterus of ten weeks, in my paper on the membranes of the human ovum in the 17th volume of the Transactions of the Society: and in several of the preparations of the gravid uterus in the Hunterian Museum, the Graafian vesicle is also contained within the corpeus luteum, and forms its central cavity." 333.

So Dr. Lee concludes that the corpus luteum is neither produced by a thickening of the inner layer of the Graafian vesicle, nor by a deposit of a new substance between its two coats, but that it is formed around the outer surface of both these coats of the Graafian vesicle, and that the stroma of the ovarium is in immediate contact with the external surface of the yellow matter.

As gestation advances, Dr. Lee continues, the deep yellow colour of the corpus luteum fades, and the Graafian vesicle in its centre contracts and assumes a peculiar white membranous appearance, with small bands passing outward through the substance of the yellow matter, like the radii of a circle.

The corpus luteum has almost completely disappeared, and the ovarium returned to its natural size about three months after parturition. A small depression on the surface, and a slender white line running into the substance of the ovarium, are all the traces of the corpus luteum which remain in an ovarium three months after delivery.

"In the ovaria of women who have never been pregnant, yellow oval-shaped bodies are frequently found, which it is difficult to distinguish from true corpora lutea.

In the greater number of spurious corpora lutea, as Dr. Montgomery has observed, the appearances are produced by blood extravasated within the Graafian vesicles, which assumes a fawn hue as the colouring matter disappears by absorption, and undergoes various changes, similar to those which are observed to take place in coagula of blood formed in the cavities of veins from inflammation of the coats or mechanical obstruction. After a longer or shorter period, the blood is entirely removed, and the coats of the vesicle contract, and often assume a brown, yellow, or black colour. In these false corpora lutea, the yellow matter is contained within the Graafian vesicle, and does not form around it, as true corpora lutea are always observed to do.

In advanced life a thickening of the layers of the Graafian vesicle not unfrequently gives rise to appearances resembling corpora lutea. These, and all other false corpora lutea, are generally found deeply imbedded in the substance of the ovarium, or, if they are near the surface, they are not actually in contact with the peritoneum, but have a small portion of stroma intervening. If there is a cicatrix over these, it has an irregular form, very unlike the small circular aperture always seen in the peritoneum covering the true corpus luteum. Besides, in true corpora lutea there are always bands running from the outer surface of the central capsule to the stroma, surrounding the yellow substance of the corpus luteum." 335.

Appearances which might be mistaken for true corpora lutea have been observed in the ovaria of women who have died during menstruation.

"On the 18th of November, 1832, I examined the uterus and the ovaria of a young woman who had died suddenly the preceding day, when the catamenia were flowing. Both ovaria were larger than usual, and the Fallopian tubes were red and turgid. The peritoneal coat of the left ovarium was perforated at that extremity nearest the uterus by a small circular opening, around which the sur-

face of the ovarium was elevated, and of a bright red colour. When cut into, the substance of the ovarium around had a fawn colour.

On the 14th of January, 1837, a woman thirty-seven years of age, who had long suffered from hysteria, died suddenly in St. George's Hospital, during menstruation. No morbid appearance was found to account for her death. A small circular aperture was observed in the peritoneum of the left ovarium, near the point where the corpus fimbriatum is fixed to the extremity of the ovarium. This opening communicated with a cavity in the substance of the ovarium, which was surrounded with a soft yellow substance, of an oval shape. The distinctive characters of the true corpus luteum were wanting.

From all the observations hitherto made upon the true corpus luteum, we may conclude that it is never formed but as a consequence of impregnation. The yellow oval-shaped substances found in the ovaria of women who have never been pregnant, are produced by morbid states of the Graafian vesicles, and are essentially different in structure.

P. S. On the 27th of July, 1839, a lady, 29 years of age, died in the second month of her first pregnancy; and I inspected the body on the 29th, with Mr. Jorden of Lower Belgrave street. The right ovarium contained the corpus luteum, from which there escaped about a small tea-spoonful of yellow serous fluid when it was cut open. On the 30th of July, I examined the ovarium and corpus luteum with Sir Astley Cooper and Mr. Wharton Jones, and the result is, that the correctness of the view which has been taken of the structure of the corpus luteum in this paper is now put wholly out of doubt. From the preparation of the part and the fac simile made of it by Mr. Jones, it is evident that no capsule surrounds the yellow matter, but that the outer surface of the yellow matter is in immediate contact with the stroma, or proper tissue of the ovarium. It further clearly appears, that both the layers of the Graafian vesicle are within the yellow matter, that the innermost of these layers is smooth, and the outer layer rough and filamentous, and that processes are sent out from this exterior layer which penetrate the yellow matter to a considerable depth, and in some parts go quite through it to the stroma of the ovary. The peculiar convoluted appearance of the yellow matter is also distinctly seen." 337.

Nothing can seem more satisfactory than this communication of our able and excellent friend, Dr. Lee.

This concludes our account of the present volume of the Society's Transactions—Transactions which still maintain their high character, and are eminently worthy of the medical literature of the country.

GATHERINGS FROM GRAVE YARDS, &c. &c. By *G. A. Walker*, Surgeon. Longman, and Co. 1839.

THE object of the present work is, to open the eyes of the public to the dangerous and disgusting results arising from the present practice of interments in the heart of cities, and in the midst of a dense population; and to endeavour to procure "the entire removal of the dead from the immediate proximity of the living" It cannot be denied that the present manner of burial has become a serious evil, and one well worthy of the attention of the Government; but we are afraid that the custom, which originally arose from the credulous belief of the common people in the powers of the church over souls after death, inducing them to seek a grave in the immediate

neighbourhood of some place of worship as a protection against the enemy of mankind, is now too deeply rooted in the human mind to be easily eradicated.

Setting aside, however, the deleterious effects to the human frame from the pestiferous vapours continually exhaling from such enormous masses of putrefying remains, which must exercise a most baneful effect, especially on those living in the more immediate vicinity of these pest-holes,—we think that, if the public attention were to be once fully directed to the disgusting and monstrous practices continually resorted to with regard to the ashes of the dead, in order to make room for fresh supplies, they would be inclined to prefer a sepulture removed from the town, and in which they might rest in peace, to the present revolting practice of huddling up as many human bodies as can possibly be crammed into one narrow space in order that the proprietors of these places may reap as great a harvest as possible. Let us take, for example, one case detailed by our author: he is speaking of the burying-ground underneath Enon Chapel:—

"This space measures in length 59 feet 3 inches or thereabouts, and in width about 28 feet 8 inches, so that its superficial contents do not exceed 1,700 square feet. Now, allowing for an adult body only twelve feet, and for the young, upon an average, six feet, and supposing an equal number of each to be there deposited, the medium space occupied by each would be nine feet: if, then, every inch of ground were occupied, not more than 189 (say 200 in round numbers) would be placed upon the surface; and admitting (an extravagant admission most certainly) that it were possible to place six tiers of coffins upon each other, the whole space could not contain more than 1,200; and yet it is stated with confidence, and by credible authority, that from 10,000 to 12,000 bodies have been deposited in this very space within the last sixteen years!" 237.

It is not long since an extreme sensation was excited by the greatly exaggerated tales with regard to the practice of exhumation for the purposes of dissection, but we must say that none of these tales could at all equal the wholesale exposure and dismemberment of the dead which must here have been had recourse to.

We will now, however, proceed to a consideration of the book itself.

Mr. Walker devotes the first part of his work to a history of the burial-places of the ancients.

1. *Sepulchres among the Jews.*

According to the Jewish law the touch of a dead body contracted a legal impurity, hence they dreaded all communication with it, so much so, that travellers were even forbidden to walk near the places where the dead had been interred. Every city had its public cemeteries beyond the walls.

2. *Funeral Rites of the Greeks.*

Inhumation appears to have been the most ancient custom among the Greeks, and the practice of conveying the dead to a distance from cities, was sustained both by the laws and by the religious doctrines of this refined nation.

Among the Romans the prohibition of inhumation in towns, was fully established in the law of the twelve tables, "Hominem mortuum in urbe ne sepelito neve urito;" and this law was renewed by all the succeeding forms of government.

Among the early Christians, also, the practice was for a long time zealously observed. The first person to whom they granted the privilege of being buried within the walls of a church was Constantine; after this the practice became more and more common till at last interments within churches was accorded to "Pagans as well as Christians, to the impious and the holy." The prohibition, after Constantine, was renewed in the code of Theodosius, and afterwards in that of Justinian, but though these edicts produced some effect for the time, yet the habit had become so universal, that the efforts to restrain it, made by the decrees of more than twenty councils convened at different periods from the 8th to the 18th century, were of no avail. In 1765, the Parliament of Paris took a stand against the abuses of the present system of interment; in the preamble to their decree on the subject, it was asserted that "daily complaints are made on the infectious effects of the parish cemeteries, especially when the heats of summer have increased the exhalations; then the air is so corrupted, that the most necessary aliments will only keep a few hours in the neighbouring houses: this proceeds either from the soil being so completely saturated that it cannot retain or absorb any longer the putrescent dissolution, or from the too circumscribed extent of the ground for the number of dead annually interred. The same spot is repeatedly used; and, by the carelessness of those who inter the dead, the graves are, perhaps, often re-opened too soon"

It was not, however, till 1790 that a law was passed, by the National Assembly, commanding all towns and villages to discontinue the use of their old burial-places, and to form others at a distance from their habitations. The cemeteries of Paris are four in number, viz. Père-la-Chaise, Montmartre, Vaugirard, et Mont Parnasse.

"The French Government has therefore shewn itself pre-eminently attentive to the health, and, consequently, to the happiness of its members. Commissions were issued—enquiries instituted—laws enacted—royal decrees published, and well arranged plans formed and executed. The remains of those who had long lain mouldering in their tombs have been carefully removed from the interior of cities, and respectfully and securely deposited, and mortuaries have been fixed and consecrated for those who follow so far distant from 'the busy hum of men' as not to molest or endanger the survivors; whilst in almost every other country the putrefactive process emanating from those who have gone to their last homes is allowed to accumulate in the very midst of the habitations of the living, and to form the nuclei of increase, if not the origin, of the most malignant diseases." 90.

Having thus given an extremely slight sketch of the history of burial places, (for an exceedingly interesting description of which we must refer the reader to the book itself,) we will now follow the author in his description of the state of some of the

BURYING-PLACES OF THE METROPOLIS.

Burying Ground, Portugal Street.—"The soil of this ground is saturated, absolutely saturated, with human putrescence. * * * The effluvia from this ground at certain periods are so offensive, that persons living in Cle-

ment's Lane are compelled to keep their windows closed ; the walls even of the ground which adjoins the yards of those houses, are frequently seen reeking with fluid, which diffuses a most offensive smell." Typhus fever appears to be very prevalent in the neighborhood, especially in Clement's Lane, which is absolutely surrounded by burying-grounds.

Enon Chapel.—The upper part of this building is devoted to the purposes of public worship, underneath it, is the burying-ground, being separated from it only by a boarded floor. From ten to twelve thousand bodies have been placed here, since its establishment, in pits, the uppermost of which were covered only by a few inches of earth.

"Soon after interments were made, a peculiar long narrow black fly was observed to crawl out of many of the coffins ; this insect, a product of the putrefaction of the bodies, was observed on the following season to be succeeded by another, which had the appearance of a common bug with wings."

A Sunday school is held in the chapel.

" Residents about this spot, in warm and damp weather have been much annoyed with a peculiarly disgusting smell ; and occasionally, when the fire was lighted in a house abutting upon this building, an intolerable stench arose, which it was believed did not proceed from a drain. Vast numbers of rats infest the houses ; and meat exposed to this atmosphere, after a few hours, becomes putrid." 156.

St. Clement's Church, Strand.—There is a vault under this church called the '*Rector's Vault*,' the descent into which is in the aisle of the church near the communion table, and when opened the products of the decomposition of animal matter are so powerful, that lighted candles, passed through the opening into the vault, are instantly extinguished ; the men at different times employed, have not dared to descend into the vault until two or three days had elapsed after it had been opened, during which period the windows of the church also where opened to admit the perflation of air from the street to occupy the place of the gas emitted ;—thus a diluted poison is given in exchange from the dead to the living in one of the most frequented thoroughfares of the metropolis. The other vaults underneath the church are also much crowded with dead. From some cause, at present doubtful, these vaults were discovered to be on fire* upwards of fifty years ago ; they continued burning for some days, and many bodies were destroyed." 158.

There was formerly a well by the side of the church, but the water became so nauseous that it could not be drunk, owing to its becoming impregnated with the putrefying matter with which the ground was charged.

Drury Lane Burying Ground.—The ground is now raised to a level with the first-floor windows surrounding the place, in it have been deposited some thousand of bodies.

Whitechapel Church.—The burial-ground adjoining the church, placed in the midst of a dense population is so thickly crowded as to present one entire

* " This is not a very unusual circumstance ; the vaults underneath St. James's Church, Jermyn Street, many years since, were on fire."

mass of human bones and putrefaction. "In digging a foundation for a new wall, the workmen penetrated through a mass of human bones eight or ten feet in thickness; these bones were thrown out and for some time lay exposed to public view, scattered over the ground in a loathsome humid state."—These were afterwards deposited in two or three pits which were filled up to within a few inches of the surface.

Bunhill Fields, City Road.—In this burial-ground, occupying about seven acres, more than one hundred thousand interments are supposed to have taken place.

Mr. Walker has given a detailed account of many more of our metropolitan cemeteries; but we think that, from what we have furnished, the reader will be able to form a pretty accurate judgment of the remainder. We will therefore, extract the account of only one more, to show that this system is not confined to the poorer parts of the town, but extends even to the immediate vicinity of the palace.

"*Buckingham Chapel*, situated in Palace Street, about three minutes' walk from Buckingham Palace. There are two vaults and a burying ground belonging to this chapel; one of the vaults is *underneath very large school-rooms for boys and girls*,* and the other is *underneath the chapel*; the entrance to these vaults, is through a trap door, in the passage, dividing the school-rooms from the chapel; steps lead to the bottom of the building; on the right, is the vault underneath the schools. When I visited this place a body had recently been interred, and the effluvium from it was particularly annoying. The vault is supported on wooden pillars, and there is only one grating, which fronts the street, to admit light and air; the floors of the school-rooms, white-washed on the under surface, form the roof or ceiling of the vault—it is no difficult matter to see the children in the lower school-room from this vault, *as there are apertures in the boards sufficiently large to admit the light from above*. This place is spacious but very low;—the vault on the left under the chapel, is about the same size as that under the schools, though much lower. I was assured that the ground was so full of bodies, that there was difficulty in allotting a grave; the roof of this vault is formed by the under surface of the floor of the chapel; it is white-washed, the light passes through it; the smell emitted from this place is very offensive. In the vault underneath the chapel there are piles of bodies placed in lead; the upper ones are within a few inches of the wooden floor." 184.

We will not attempt to offer any comments on the facts which have here been detailed; they speak for themselves.

The remainder of the work is principally occupied by the consideration of the ill effects produced on the human constitution by these putrid exhalations; out of the immense number of cases brought forward by our author to prove their dangerous tendencies, we will select two only as illustrations of the results produced during the two most dangerous stages of animal decomposition, which he considers to be,—1st, that which takes place almost immediately after death, and the 2nd, during the extreme degree of putrefaction. As an instance of the evil consequences produced by the exhalation of the gasses generated during the first stage, we may quote the following case.

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* "Some hundreds of children here receive their daily education."

"In the month of June, in the year 1825, a woman died of typhus fever, in the upper part of the house, No. 17, White House Yard, Drury Lane; the body which *was buried on the fourth day*, was brought down a narrow staircase; Lewis Swalthey, shoe-maker, then living with his family on the second floor of this house, and now residing at No. 5, Princes Street, Drury Lane, during the time the coffin was placed for a few minutes, in a transverse position, in the doorway of his room in order that it might pass the more easily into the street, was sensible of a most disgusting odour, which escaped from the coffin. He complained almost immediately afterwards *of a peculiar coppery taste*, which he described as being situated at the base of the tongue and posterior part of the throat: in a few hours afterwards, he had at irregular intervals slight sensations of chilliness, which before the next sunset had merged into repeated shiverings of considerable intensity; that evening he was confined to his bed,—he passed through a most severe form of typhus fever; at the expiration of the third week he was removed to the fever hospital—he recovered; he had been in excellent health up to the instant when he was exposed *to this malaria*." 132.

The effects of the gases produced during the extreme stage of putrefaction are illustrated by the following case.

"My pupil, Mr. J. H. Sutton, accompanied by an individual, for many years occasionally employed in the office of burying the dead, entered the vaults of St. ———church; a coffin, '*cruelly bloated*,' as one of the grave-diggers expressed it, was chosen for the purpose of obtaining a portion of its gaseous contents. The body, placed upon the top of an immense number of others, had, by the date of the inscription on the plate, been buried upwards of eight years: the instant the small instrument employed had entered the coffin, a most horribly offensive gas issued forth in large quantities. Mr. S. who unfortunately respired a portion of this vapour, would have fallen but for the support afforded by a pillar in the vault; he was instantly seized with a suffocating difficulty of breathing (as though he had respired an atmosphere impregnated with sulphur); he had giddiness, extreme trembling, and prostration of strength; in attempting to leave the vault, he fell from debility; upon reaching the external air, he had nausea, subsequently vomiting, accompanied with frequent flatulent eructations, highly fetid, and having the same character as the gas inspired. He reached home with difficulty, and was confined to his bed during seven days. The pulse, which was scarcely to be recognised at the wrist,—although the heart beat so tumultuously, that its palpitations might be observed beneath the covering of the bed clothes,—ranged between one hundred and ten and one hundred and twenty-five per minute, during the first three days; for many days after this exposure, his gait was very vascillating." 133.

The remainder of the book is devoted to a general *resumé* of the principal facts and observations contained in the preceding pages.

Having now completed our review of this work, it only remains for us to say that it will be found well worth the perusal of every person at all interested in the preservation of the health, decency, and cleanliness of the metropolis, and may, perhaps, prove not unacceptable to the general reader, as presenting a complete and curious history of the different modes of interment which have been resorted to among different nations, as well as for its novel description of the burial-places of London, which, we believe, have never, until now, formed the subject of any work.

In taking our final leave, we must, in justice to Mr. Walker, state, that the book is clearly and vividly written, and the author deserves great credit for the industry and zeal which he has displayed in his by no means agree-

able researches among the grave yards; we hope, however, that he may reap a full reward for his labours, by seeing the disgusting nuisance against which he has declared war, at least mitigated, even if not altogether put a stop to.

MEDICAL ETIQUETTE; OR AN ESSAY UPON THE LAWS AND REGULATIONS, WHICH OUGHT TO GOVERN THE CONDUCT OF MEMBERS OF THE MEDICAL PROFESSION IN THEIR RELATION TO EACH OTHER. Compiled exclusively for the Profession. By *Abraham Banks*, Esq. Member of the Royal College of Surgeons, London; Licentiate of the Company of Apothecaries; and late Surgeon in the Hon. East India Company's Service. Better perhaps expressed thus: M. R. C. S. L.; L. A. C. L.; S. H. E. I. C. S.; &c. &c. London, Charles Fox, 1839.

MR. BANKS is certainly a humorist. The abreviated titles are a *capital* joke. And he is an enthusiast in the cause of medical etiquette. He does not mince matters—he is no milk and water, juste-milieu man—he throws himself body and soul into etiquette, and he comes out professional honor personified.

He tells us that his Treatise—

"Is not addressed to him,* who from accident, or any other cause, having been called in to attend another man's patient, endeavors by every mean and underhand insinuation to wrest that patient from the original attendant; nor is it addressed to him, who may have been sent for, whilst another was in attendance, and taking advantage of the absence of that other, after much apparently skilful examination, and many enquiries to no purport whatever, casts up his eyes to Heaven, and with that mysterious waving to and fro of the hands, and that significant medical '*hum*,' exclaims, aghast in wonder and amaze, 'What a pity you had not sent for *me* before—if I had only been called in *six hours* sooner—but it is now too late, it has gone too far;—nor to him, who under similar circumstances, on being shewn the medicine which had been prescribed, so natural to the friends of the patient, examines the devoted bottle with wonderful sagacity, and after due smelling, and sniffing, and tasting, and various other mountebank operations, dooms the unconcious deadly potion, consisting perhaps of a little saline mixture, to the awful punishment of ejection from the window;—nor is it addressed to him, who resolves to build up a reputation for fame at any price, who depends more for success upon detraction, and sapping the reputation of others, than on any intrinsic merit of his own. These generally consist of the out-pourings of the schools, of novices who have only seen the A B C of practice, and possess a little smattering of the science, but who, as they gain experience and knowledge, outgrow this absurdity. We should hope the maturer part of the profession was a stranger to such glaring outrages as these; if, however,

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* "All the imperfections of character alluded to are unfortunately taken from living practitioners."

there be any of advanced practice capable of such conduct, all that we can say is, that they are too contemptible even for castigation." xii.

We wish we could say that we thought Mr. Banks quite right in this aspiration. We are afraid that it is not the out-pourings of the schools only who practice these mean arts. Some men of more years and of greater standing know the trick and play it. But the press, like Ithuriel's spear, *may* shame or frighten them, and never was a subject more legitimately suited to its lash than such paltry and dishonourable conduct.

"But," continues Mr. Banks, "to aim at higher game, it is not addressed to him who takes advantage of having once been summoned to a family, to call again unasked, and by sundry intimations endeavours to lower the estimation in which the regular attendant is held, and thereby pave the way for his own admission; to call such conduct unprofessional and dishonest, is not rendering it full justice; it is base and unmanly in the extreme; it is assassination in the dark—the resort of the coward. The man who gives his adversary due notice of attack, and thus enables him to withstand the shock of his charge, who openly declares him to be an ignorant blockhead, and unfit to practice his profession, is a noble and honest character compared with this other. Nor, lastly, is it addressed to the man who carries his profession upon his back wherever he goes, who never loses an opportunity of instilling into the minds of all those who have the misfortune to pass before him, that he is the incomparable; that if a person really wishes to be cured, to *him* they must go; that of all the professors of medicine he is, emphatically, *the professor*—the nonsuch of the profession; or, to him who seizes the opportunity, when the family are present, of reprimanding a young practitioner for alleged indiscretion, for the malicious purpose of injuring his reputation, or who expatiates in his absence on the advantages of employing a physician exclusively, who understands disease and infirmities better, and who, when unhampered by a general practitioner, orders little or no medicine: for such men there are, to their shame be it said, amongst the leading physicians of the day." xiv.

We would fain hope, nay we do believe, that the last imputation is unjust. There is no "leading" physician nor consulting surgeon who could so behave to "practitioner," old or young. We cannot credit it.

Mr. Banks' essay *is* addressed to the honourable men (the vast majority) among us. Even such a man, with the finest self respect, the nicest sense of decorum, the purest spirit of honour may be placed in embarrassing situations. For instance, says Mr. Banks, he may be sent for in a hurry when the regular attendant happens to be out of the way; he goes and prescribes, then of course retires, leaving the patient under the care of the regular attendant; but as he is going, the family request him to call again; he pleads professional honour and etiquette, proffering his services at any time under similar circumstances; the family still urge him to continue, asserting that it will make no difference so far as the previous attendant is concerned, as if he refuses, they will send for some other person; a man, whose feelings are not over keen, has no difficulty here. But we trust the profession embraces thousands of members, who would feel it a very unenviable situation.

We shall not follow Mr. Banks through all the questions that he solves, or tries to solve. We shall content ourselves with discussing some of the more knotty points of honour.

1. *When one Practitioner attends a case of Midwifery, or an accident, for another.*

"There seems to be no general understanding in the profession, as to what is to be done in respect to the fee; some will take it, and keep it, and occasionally the patient also if they can; others compromise the matter, and retain a portion; whilst others again persist in refusing any consideration whatever. It is perhaps more congenial with the highest notions of honour, and more consistent with true dignity, to adopt this last practice, but many inconveniences necessarily arise from it; for instance, unless it be universally followed, it leads to a great deal of unfairness. A very sensitive practitioner may always persist in refusing any remuneration, whilst he under similar circumstances shall have every fee wrested from him: this is most unjust, and places an honourable man in a very disadvantageous position. To give another illustration of its injustice —there may be two men in a neighbourhood, the one having a very large, and the other a small practice; the chances in this case will be, that the man of small practice will do ten, or more times as much for the other practitioner, as that other does for him, so that he becomes in a measure his assistant, without the fair compensation. Again, in London, from the inconvenient practice of employing medical men at such great distances, it often happens that about the outskirts, or in the suburbs, a man may have to attend more cases for others than for himself; here also he acts the part of assistant to the more established practitioner.

Now, to obviate these difficulties, some persons have proposed to divide the fee; and amongst many this is done by a previous understanding to that effect, and if all fees were of much the same magnitude there could be no objections urged against this arrangement; but as some practitioners attend for almost as few shillings as others do for guineas, it seems unfair that he who may have paid two or three guineas should in his turn only receive a crown, or less, for confering a similar kindness. The inconvenience also of having a fixed remuneration must be clear to every one, as in many cases a practitioner might have to pay more than he receives.

To remove all these difficulties, we would therefore propose that, whenever one practitioner is accidently called in to attend a labour for another—excepting amongst intimate friends, who of course will consult their feelings much better, by allowing a larger latitude of generosity, if we may use that word—he shall receive half the fee, recognizing no fee below one guinea, or above two, and that this shall in future be considered perfectly compatible with the highest notions of honour and professional etiquette, as it would appear to be consistent with equity and common sense. The same rule, with some slight modification, might apply to accidents, especially those of a serious character." 3.

This proposition seems to us to be fair enough. We observe that some of our contemporaries scout the idea of any such arrangement between general practitioners, no such being adopted by *Pures*. But the cases do not seem to us to be quite analogous. General practitioners live more by a limited number of patients in a given range, and by connexion, than the Pures do: and a more strict code of reciprocity becomes requisite. There is not so much danger of Pures clashing as of general practitioners clashing, and every fence against what might excite bad blood should be erected. It would be well were there a more systematic establishment of local societies among the general practitioners than there is. Many *trespasses* would be prevented.

2. *When Two Practitioners meet in Consultation.*

"It often happens, at the desire of the patient, or his friends, another general practitioner is called in, by way of consultation: now there can be no objection to this, nor do we see why two general practitioners should not meet in perfect harmony upon a case, if there were some general understanding in the profession as to the conditions upon which that meeting should take place. As it is now, this often leads to some unpleasantness, and commonly to reluctance on both sides; it usually terminates in one of the parties giving his attendance gratuitously, though we confess we cannot perceive why he should do so any more than a physician, or pure surgeon; it is lending his sanction to a practice, which it is both his interest and his duty to endeavour to overthrow, nor indeed is it fair towards himself. Occasionally he receives the customary fee; this again is unfair towards the other practitioner: for why should two men holding the same rank, possessing the same legal qualifications, the actual experience and knowledge pretty equally balanced, be placed in such different positions? Yet the profession may daily witness the monstrous absurdity of two men of equal grade, the one receiving his guinea, the other his half-crown, for the same services, with this difference, that he who receives the half-crown has to provide medicine in the bargain. Now to obviate this anomaly, we would suggest that when two practitioners, possessing the same *legal* qualifications (for however absurd these may be, as the line is now drawn, yet they form the only criterion for us to act upon), meet upon a case, they should be received on precisely the same footing, and each have the same amount of remuneration, and at *the same time*, for that particular consultation, whether this be a guinea, a half-guinea, or a crown." 7.

No doubt, this would be best; the difficulty lies with the patients. They may object to an additional charge on the part of the attendant practitioner —and it would seem odd for the other to receive only the usual sum for the daily visit. It is clearly impossible to lay down a fixed rule, when the caprices of patients interfere with its operation. If the ordinary attendant stands too much on a point he may offend. *There* is the danger. We would suggest that unless both practitioners can receive at least half a guinea each, the consultant should make no charge. He must place, of course, his gratuitous visit, not on the ground of friendship to the family, but of professional etiquette.

3. *Affectation of Mystery.*

"We have heard physicians use such words as 'secundùm artem, ad deliquium, toastùm boastum,' &c., &c., when talking to a general practitioner before others, such can only impose upon the ignorant, and cannot fail to lower a man in his own estimation; the profession should be too proud to violate the laws of good taste and honesty, to bend to popular error. We remember some time since dining at a house where there was a lawyer at table, who, amongst many other professional terms, said, nothing was so mean as a *tu quoque;* if this gentleman could have seen how ridiculous he appeared, his countenance would doubtless have betrayed some embarrassment of the internal man.

When any person unnecessarily uses technical terms in the presence of others who may not be supposed to understand them, we regard it as a direct insult to those persons; it is in fact laughing at them. Closely allied to this habit, is that of clothing medicinal preparations in false colours, such as mixing rose pink with linseed meal, vermilion with epsom salts, burnt sugar with goulard water, &c. &c. We know that strong excuses may be pleaded in extenuation; but we may be

permitted to deplore that constitution of society, which renders such conduct almost necessary; we believe it to be perfectly incompatible with an ardent love of truth, and a glowing admiration of rectitude.

Many other practices would seem to come very properly under this head, all which, being part and parcel of a system of deception, violate more or less the sacred sanctuary of truth. It is scarcely necessary to allude to that thoroughly beaten path, which has now become nearly obsolete from its palpable nature; such as being called out of churches during divine service, and other public places, and so contriving matters as to be riding hard by, when people are coming out, his horse foaming and sweating—poor animal! all in the cause of falsehood. But this has given way to other arts equally reprehensible, though of a more refined character, and not quite so obvious to public perception; such as singing very loudly over and above all the rest of the congregation, taking a conspicuous pew, and sometimes mounting on a hassock, in order to be well seen; giving the responses in very audible language, so as to excite the observation, 'Who is that pious gentleman?' making himself very officious, particularly in the charitable department, so far as the collecting goes, more especially if there is any chance of filling a medical appointment. A petition for a charity forms an excellent plea for calling on the wealthy, and putting in a good word for number One—the more so, if nobody else will do it; bowing to every one he meets, though, perhaps, he has never seen the person before; assuming a very religious tone according to the character he has to deal with, as, 'Well, Ma'am, we have maturely considered your dear little girl, and ordered such and such medicine, which, by the blessing of God, we hope will have the desired effect:' all this hypocritical cant, if it be not criminal, is truly disgusting.

Another recent manœuvre, which is sometimes practised, is putting up counterfeit medicines, and letting them lie about the counter in the surgery or shop, so as to give a false impression of business; talking largely, and contriving, if any excuse can possibly be obtained for so doing, to introduce the name of some nobleman or baronet into all his discourse, chiefly before strangers. We have witnessed instances where some unfortunate peer, who may have accidentally got his name upon an apothecary's books, has had that name mangled most unmercifully, as, 'John, has my Lord such a one had his medicine? be good enough to send that medicine to his Lordship directly; I will attend to you, Sir, as soon as I have ordered something for my Lord ———' &c. We remember hearing of a man who could not open his mouth without letting people know that he kept a horse and chaise; a bet was made upon the strength of this, that he could not answer the simplest question without introducing these essentials of his establishment. The question was put direct enough; he was asked what o'clock it was? and answered, 'When I, with my wife, passed the Horse Guards this morning in my horse and chay, it wanted,' &c." 14.

Mr. Banks has a hit at sending medicines to the wrong houses, "advice gratis," &c., but the Pickwick Papers have immortalised the "Sawyer, late Nockemorfs," already. We fear that our Professor of Etiquette is a *little* Utopian.

"Not quite so palpable," says he, "as these is that system of being all things to all men; of studiously avoiding expressing a sentiment which may be thought not exactly to correspond with another's; of feeding the ruling passions of others, whatever may be their tendency; of holding no opinion on general or public subjects; of adopting a reservedness in all mixed society. All this may be very good policy, but there is something servile in suppressing one's sentiments, lest they should not harmonize with those of other persons; in sounding one's way with such cautious timidity, lest a rumor should get afloat that one is not of the orthodox: but, above all, would we deprecate, in the strongest terms language is capable of affording, that violation of principle in public matters

which sacrifices conscience to success; a crime than which we know none greater, so utterly subversive of all the rights of society. The man, endowed with the privilege, and who goes not to the poll, is guilty of a most flagrant dereliction of duty: but he who goes and votes in violation of his conscience is such a monster of iniquity, branded so imperishably with the marks of infamy and disgrace, as ought forever to exclude him from the pale of civilized life, and render him

'A fixed figure for the hand of scorn,
To point her slow unmoving finger at.' " 16.

This is very well, but doctors must, after all, "please to live." We are so dependent not merely on the patronage, but even on the whims and caprices of the public, that few can afford to shew independence. We do not agree with Mr. Banks on the necessity for avowing political opinions. As a profession we should rather hold aloof from general politics. Whig, Tory, Radical, Socialist, are all our patients, and, as we must necessarily come into immediate contact with all, our intercourse should not be embittered, nor the benefits of medical science neutralised, by the gall of political rancour. No medical man need become a partizan of any of the factions that deform the state. We would not have it supposed that we advocate sycophantic subserviency. Far from it. No man need palter with the prejudices or the passions of his patient. He should hold himself aloof from both, and display that reserve which is the attribute both of prudence and philosophy.

4. *Mode of Payment.*

Mr. Banks has as great a horror of a bill, as any patient can have. He prefers fees, and, on "the bird in the hand is worth two in the bush" principle, as well as on every other, there can be no doubt of their superiority. He would go even as low as a shilling, and a half crown would be more than twice as good. Amongst other reasons, he esteems it because it would give patients a practical lesson of providence. There cannot be a doubt of the superiority of the plan of being paid by fees. But here again the patients are the "obstructives." The old method has become too deeply rooted, to be easily plucked up. Yet there are practitioners who have adopted the new, and with complete success. We are inclined to believe that many of the younger men will make the experiment.

Mr. Banks touches on another subject.

"The plan of present payment, too, would remove all that doubt which exists as to paying for domestics, which is often the source of much annoyance, and, occasionally, of legal dispute. There is a good deal of difference in the practice of persons respecting this; but from some experience in these matters, we hesitate not to say, that all respectable people do it generally; and, in equity, it would seem that a domestic, who has been some time in a family, has a moral claim, when it can be afforded without inconvenience. It is most unjust, and even inhumane, to throw a servant upon her own resources in case of illness, who may have faithfully discharged her duties for several years; yet we have been witness to an instance where the master refused to pay the medical expenses of a servant under such circumstances, though attended in his house both by a physician and apothecary; a man of considerable property, living in Brunswick-square, and the head partner of one of the largest legal firms in London. This is quite the exception to what is customary; and in all cases, where the master or mistress employs the medical attendant, or is aware of the attendance, we think they ought to be responsible, unless they have previously intimated to the

contrary; and that it rests with them to state so, and not with the practitioner to make the inquiry." 22.

The physician and consulting surgeon is much less frequently remunerated for attendance on a domestic than the general practitioner. This is one of the cases which must be left to the determination of circumstances, and to the discretion of the medical attendant. Nothing can be more impolitic than to press a claim which is reluctantly allowed. Wealthy and liberal persons may pay for their servants—persons who are neither liberal nor wealthy will not; and if pressed to do so may *bolt.* It is a ticklish thing for doctors to stand too much upon right.

5. *Are medical Pupils to pay?*

We should decidedly say, no! And yet we have known a London surgeon in large practice and of scientific eminence take fees from his own pupil, knowing him to be such. This was too bad.

6. *Are Medical Men to pay one another?*

Undoubtedly not. Of course one practitioner is not bound to find medicine for another; he cannot be expected to be *out of pocket.* But his time (within reasonable limits), and his skill (provided the tax on it is not excessive), should be at the service of his sick brother. To this there must, in the nature of things, be some limitation. A man in large practice in London can scarcely be expected to go such a distance in the country as will cost him a day or two, without such a remuneration as will prevent his being a loser. A great difference should be made in the *amount* of a fee paid, under these circumstances, by a professional or a non-professional person, and, perhaps, something should be presented in the lieu of money. But for a man to go unremunerated altogether would be both unjust and impolitic. We say impolitic, for men in good practice would find or make excuses for their non-attendance, if they were served so.

"The same regulations, which apply to medical men, we think, should apply whilst they are living to their families; but not after their decease. That liberality which dispenses indiscriminately its favours upon all—the rich and the poor, the deserving and the undeserving, we strongly condemn, which often extends even to unprofessional acquaintances; we call it a wanton, wasteful, irrational, and mischievous liberality. The practice of some persons, when they happen to have a medical man at their table, of pumping him, and so getting back the value of their dinner, is mean and paltry in the extreme; and the claims which relatives often put forth, are very unreasonable and unfriendly; instead of encouraging a young professional person, they only serve to prey upon him.

With respect to the families of medical men after their decease, we do not see what other claim they possess to be placed on a different footing with the rest of the world, than the rights of friendship, and the plea of straitened circumstances. The notion entertained by some that the relations of deceased medical men, without reference to state, possess a decided claim upon all the members of the profession, seems to us an absurd, unjust, and visionary idea. A little extension of the same principle would produce a community of property, and lead all persons to throw their labour, and goods, into the general weal; which, however disinterested it might be, we do not think would tend to advance the civilization and improvement of mankind. A habit of grasping is by no means a general failing in the profession; the fault lies a little the other way;

and there are very many who much prefer indulging their liberality, than extending the lining of their pockets. These remarks have been occasioned by a circumstance which came under our observation some time since, where a young practitioner had been attending upon another much older, and in very superior circumstances, most assiduously, and so far as thanks and verbal acknowledgments went, was amply repaid; but no pecuniary consideration was offered, although the attendance had been long, and much medicine, and many things unconnected with medicine, which are usually kept in a chemist's shop, had been supplied; the parties never having heard of each other before the accidental occurrence which brought them together. To suffer this to pass by unnoticed in any other way than words, we think was both illiberal and undignified." 30.

We think so too. He must be a shabby fellow who does not send his brother practitioner a piece of plate at least, when under such an obligation.

7. Remuneration for Prescriptions and Medical Certificates.

"It has always appeared to us most unreasonable on the part of the public to request, and very injudicious also on the part of medical men to give up, a copy of one of their own prescriptions which has proved extremely serviceable, without equivalent; yet it is a common occurrence for any patients, on the plea of going into the country, to request of their medical attendant a prescription of some medicine they may have been taking a considerable time, and may possibly continue to take for years.

From the foolish system of charging for attendance under the form of medicine, the general practitioner has probably been receiving three shillings for that which would be prepared at a chemist's for half, or less; of course that prescription never comes back again; and thus a medical man gives up, perhaps, a small annuity, for no consideration! However, no one with the least pretension to liberality, could refuse a patient's making the request under such plausible circumstances, though we have full reason to believe that it is often done for the very purpose of getting it put up cheaper. A bold demeanour is not the general characteristic of the profession, and thus the majority concede to the application, though usually with reluctance; some refuse altogether upon the absurd plea that it cannot be written out, or that no other person could prepare it, and offer to supply a sufficiency of medicine for the time of absence. This would seem to be very fair, as every man is certainly entitled to the benefit of his own preparations, though it would be much more independent to state the real reason of refusing But this cannot always be done; patients may be going abroad, or to leave the place entirely, and medicine will not invariably keep, and much inconvenience will sometimes arise from carrying or sending it to distances; now why a prescription under such circumstances should not be paid for, we cannot tell, except from the absurdity of custom." 32.

Mr. Banks suggests that where a patient applies for a prescription of a general practitioner of medicine, which has proved its value, on the plea of going into the country, or any other pretext whatever, a fair consideration be demanded as a matter of course, proportioned to the circumstances of the patient, and the probable use it is likely to prove of, the minimum amount being equal to a physician's fee; and to prevent individual prejudice, that this be universally adopted, and that the profession manifest a becoming spirit when the public show any disposition to impute improper motives to this regulation. Something of this sort should certainly be generally agreed on amongst general practitioners.

Mr. Banks greatly dislikes the idea of writing certificates, and things of that sort, without pay. The thing may be unpleasant, but it is not easy at all times to avoid it. The request is made, in the majority of instances, by patients whom we have been attending, and it would appear invidious to demand, on all occasions, a remuneration. What Mr. Banks says of law is very true. Nothing is done in it for nothing. But the fixed fees of lawyers and the fluctuating charges of doctors do not admit of strict comparison. The mode of doing business in the two professions is quite different, and so are all the circumstances. No doubt, there is too facile a temper with regard to fees on the part of medical men. The affluent reject them, and the more needy members of the profession suffer. A patient says:—"Oh, Mr. so and so, (a physician or consulting surgeon) would take no fee, and this medical man makes a charge." Until the profession agree on these matters we see no prospect of any satisfactory arrangement. If a practitioner is too *exigeant* he *will* suffer, and if forced to be too liberal, he *does* suffer.

"There are certificates of death in consequence of the new law, which give a great deal of trouble. Undertakers, sextons, and clergymen, all receive their fees before they will stir an inch, then why should not a medical man receive his, without whose authority none of them can legally act at all? Is it anything uncommon for a clergyman to refuse performing the burial-service before he has received his legal rights? And yet the poor medical practitioner, who has had all the responsibility of the illness, and perhaps never received a farthing for his trouble, is expected to write these certificates without any acknowledgment! All this is utterly monstrous, and part and parcel of the remnants of the old system of demanding medical evidence at inquests gratuitously. We respectfully refer it to the whole profession whether, for the future, it would not be more consistent with justice, and more calculated to support the respectability of the profession, to make an adequate charge, for looking over, or signing any paper, certificate, or document whatever." 37.

This recommendation will not, assuredly, be universally acted on. It were much to be wished, however, that some understanding could be come to on the part of the profession. As matters stand all suffer, but more particularly the general practitioner. Not that he has more to do gratuitously, in this way, than others, but he can, generally, less afford these irruptions on his income, than his more wealthy friends, the *pures*.

8. *When a Practitioner is accidentally sent for to the Patient of Another.*

"This is the case to which we made allusion in the preface; that, in consequence of the regular attendant being out of the way, and the family should refuse to see an assistant, another practitioner is sent for, who, on discovering the position of affairs when he arrives, and having prescribed for the patient, of course takes his leave in favour of the family practitioner; but they, pleased with his manner and address, and from some real or fancied neglect of their own medical adviser, request him to continue his visits: he declines on the plea of its being unprofessional; but they, in order to induce him to comply with their desire, assert, that if he refuses, it will make no difference so far as their original attendant is concerned, for they will send for some other person.

When this is really urged with truth and sincerity, and not out of complaisance, we cannot see that any stretch of honour requires a man to forego attendance, because this would lead to a most overbearing, tyrannical custom; it would, in fact, be tantamount to saying to the public, that whatever practitioner you choose to employ in the first instance, him you shall continue to employ: this would

be an insufferable dictatorial measure. The public have an undoubted right to send for whom they choose; and if they feel dissatisfied with one man they are privileged to send for another; and no reflection, under these circumstances, can equitably be cast upon a practitioner, provided he has done nothing directly or indirectly to bring the former one into disrepute. But here we feel particularly anxious not to be misunderstood: for our own part, we should be very reluctant to obtain a patient this way; much suspicion will always attach to such a case; nor do we consider that a patient, so acquired, will ever reflect much credit on the possessor. Persons are often capricious, and feel mortified if a man has happened to be out of the way once or twice; and some trifling excuse made for him will mostly rectify matters, procure the apologist the esteem of both parties, and more especially the sanction of his own conscience (we shall, perhaps, be thought to be wandering in the wilds of a visionary Elysium; but we would reiterate, that we are only writing to men endowed with the moral qualifications of practice); and at any future time, if he happens to be sent for first, he unhesitatingly goes without the possibility of the most distant reflection being cast upon his character; but by construing the dissatisfaction expressed, which may only be temporary, to his own advantage, he most justly lays himself open to the reception of similar treatment from others." 45.

It is quite clear that a man has a right to dismiss his medical attendant if he chooses. That being the case it would be contrary to reason for another practitioner to refuse to attend. The absurdity as well as wrong to the patient would be monstrous. But if a man is accidentally called in the place of another, the case wears a different aspect. The man who endeavours to filch his neighbour's patient *then* is a rogue. Manœuvring and intrigue are too often resorted to, and the

"I would not, waits upon I would,"

is too common and too palpable. The interests of the profession require that such conduct should be stigmatized, and the strictest code of professional morality enforced. The arm of opinion cannot reach all offenders, but it will deter many from wrong and it will intimidate most.

We said that Mr. Banks was a bit of an enthusiast. He has a very high notion of doctors. He proposes that we should turn conservators of the public morals; a whole profession of censors!

"We would now appeal, with all that solemnity which the importance of the thing demands, whether the members of the medical profession would not do well to take under their protecting care the glimmering embers of morality; for if they do not, who shall? Should the Law make the attempt, it would be like nursing a serpent at her very bosom; for moral law and statute law are at total variance; the one of a high, noble, refined, and elevating character; the other of a low, mean, groveling, and outreaching nature, the demoralizing tendency of which is but too apparent in the majority of its professors. The Church! But when has Sectarianism shewn herself favourable to the development of mind? When has she proved herself capable of taking those large and extended views of human nature, which comprehend the whole race? Church history has hitherto been little else than one continued series of oppressions, of prejudices, of tyrannies, of usurpations, of the blackest description. We fear that the mild and delicate Plant of morality would wither under the protection of Sectarianism, which, however admirably adapted for sowing the seeds of dissension in families, and fanning the flame of civil discord, is wholly unfitted for this nobler function. The Educator! the natural Ally of morality, to whom society would look as to a parent for assistance—but what has he yet done, but train

some for oppression, some to oppress? From the contemptible remuneration, and the low estimation, or rather the suspicious aversion, with which he is generally viewed, his profession has become merely the refuge of the mean-spirited and the destitute, where vanity, jealousy, and dogmatism are the prevailing passions. Alas! Thou poor Morality! If thou art deserted, and forsaken by the only men capable of throwing a shield of protection around thee, and infusing new vigor into thy spirit, the members of the medical profession, what hope hast thou? Nay; despair, and die!" 53.

If this be so, we fear that morality is in a very asthenic state? But what will the Church say to this? Ne sutor ultra crepidam, no doubt; "stick to the body, to the phthisic and the physic," quoth the parsons, "but leave the soul to us." And we really think the Cloth would be hardly dealt with if we served them in the fashion Mr. Banks would wish. Besides, the Church has the munitions de guerre, fifty millions of revenue, as Lord John remarked. If that will not *force* morality, we are afraid that no medical manure will answer.

9. *When a Second Party is called in to decide upon the Treatment of Another.*

"Nothing can be more ageeable to a rightly constituted liberal mind, than to give an opinion in confirmation of the judicious treatment adopted by another; but when it happens that there has been most palpable neglect, or most decided maltreatment, a conscientious man is necessarily thrown into a very unenviable moral dilemma. Strongly reluctant to infringe in the least degree upon the claims of generosity, or lay himself open to the slightest imputation of illiberality, he yet feels a moral responsibility resting upon him to give his honest opinion; what is he to do? He must apply for assistance to Moral Philosophy; she will teach him that truth constitutes the great bond of union between man and man; and that however adverse to his feelings, yet his duty to society, his duty to himself, his duty to the individual soliciting his opinion, call upon him to declare his real sentiments.

It has appeared to us that a very common notion which has gone abroad, that under all circumstances the previous treatment of a patient is to be supported and confirmed, has its origin in a very false refinement of feeling; and when duty and feeling clash, we apprehend there will be few who will hesitate an instant which is to be paramount. When it is considered how differently the time which ought to be devoted to the acquisition of knowledge and experience is passed by different individuals, it is not fair that the man who has devoted his whole time, morning, noon, and night, to his profession; who has been an unceasing attendant in the dissecting-room; who has sat for months over offensive subjects, until their revolting appearance through habit has almost become attractive; who, whilst his hands have been employed in laying open the works of nature, has thrown the whole force of his mind upon the subject to explore her more recondite operations; who has let no opportunity slip of collecting new facts, and arranging those in his possession; it is not fair that such a man should have no advantage over him, whose whole thoughts have been centred in most opposite things, to whom the Theatre, the Ball-room, and the Card-party, have presented more alluring attractions than the Chamber of sickness, or the Portals of Death." 56.

It appears to us that, on many accounts, the rule should be to approve, or, at all events, not to disapprove of previous treatment. Judgment is fallible, medicine difficult, symptoms deceptive, and every allowance should be made for mistakes. We all make them in turn, and no man has a *right* to

be censorious. There may be extremely gross cases, where common justice and common decency require reprobation of what has been done. But *honest* error should not be exposed, and the interest both of science and the sick, to say nothing of charity, demand that confidence in the medical attendant should not be destroyed. That is (we may be wrong) our opinion, and on such we should ever act, as we would wish others so to act towards us.

Here we must conclude, recommending Mr. Banks's little book for its high tone of honour, and rigid cast of morality. It would be well for the Profession were its precepts laid to heart, and strictly acted on.

A Treatise on the Diseases of the Heart and Great Vessels, and on the Affections which may be mistaken for them: Comprising the Author's View of the Physiology of the Heart's Action and Sounds, as demonstrated by his Experiment on the Motions and Sounds in 1830, and on the Sounds in 1834-5. By *J. Hope*, M.D. F.R.S. of St. George's Hospital; formerly Senior Physician to the St. Marylebone Infirmary; Extraordinary Member, and formerly President, of the Royal Medical Society of Edinburgh, &c.—8vo. pp. 639. London, John Churchill, 1839.

Dr. Hope informs us, in his Preface to this Edition, that the principal addenda may be found under the following heads:—

1. "The natural sounds of the heart. 2. The sound of costal percussion, with or without tinnitus (Laennec's Cliquetis). 3. Murmurs from valvular disease, and the whole subject of particular valvular diagnosis, which will now, I confidently hope, be found one of the most simple and easy departments of auscultation. 4. Murmurs of the heart and arteries independent of organic disease. 5. Venous murmurs. 6. Musical murmurs. 7. Abdominal murmurs, both connected with pregnancy, and otherwise. 8. Tremor or thrill of the heart, arteries, and veins. 9. Signs, general and physical, of pericarditis and endopericarditis. 10. Connection of diseases of the heart with apoplexy, palsy, &c. 11. Partial dilatation or real aneurism of the heart. 12. The signs, physical and general, and the pulse of softening. 13. Signs of adipose disease of the heart. 14. Aneurisms of the aorta bursting into the pulmonary artery and the right ventricle. 15. Abdominal aneurisms. 16. Anæmic, nervous, dyspeptic, plethoric, bilious, and other sympathetic affections of the heart, with their diagnosis. 17. Displacements. 18. The pulses of disease of the heart." vi.

The fiat of public approval may now be admitted to have been conclusively bestowed on this excellent work. Those who were acquainted with Dr. Hope's zeal, labours, and ability, might readily anticipate so much.—The work itself has become a standard one, and is probably unequalled in any language, on the subject to which it is devoted. We shall notice, though not at large, some few of the additional facts contained in it, and we trust that our readers will be stimulated to make themselves possessors

of the original. We shall turn to the subject of valvular disease, as on that Dr. Hope believes he has thrown much light. He considers, first, the symptoms; secondly, the physical signs.

1. *General Symptoms of Disease of the Valves.*

Dr. Hope would assign as general symptoms of disease of the valves, a greatly aggravated form of those which belong to dilatation of the ventricles. These he briefly enumerates as :—cough, copious watery expectoration in many cases, dyspnœa, orthopnœa, frightful dreams and starting from sleep, œdema of the lungs, pulmonary congestion and apoplexy, passive hæmoptysis, (i. e. sputa stained with dark or grumous blood, which occurs especially in great contraction of, or regurgitation through, the mitral valve,) turgescence of the jugular veins, lividity of the face, anasarca and dropsies in general, which in this form of disease attain their utmost degree; injection of any or all the mucous membranes; passive hæmorrhages from the same membranes; engorgement of the liver, spleen, &c., and congestion of the brain, with symptoms of oppression, sometimes amounting to apoplexy; occasionally, cerebral hæmorrhage,—all the worst symptoms, of course, of an advanced case. In the early stages, the hæmorrhages and dropsies are generally absent, and the congestive symptoms less marked. Hæmoptysis is, naturally, more rare in affection of the valves of the right than of the left side. The general symptoms result from retardation of blood in the venous system.

2. *Particular Symptoms of Disease of the Valves.*

a. When the disease is combined with hypertrophy or dilatation, as is almost invariably the case sooner or later, the symptoms are more severe than those of an equal degree of hypertophy or of dilatation alone.

b. Diseases of certain valves impress, says Dr. Hope, in opposition to the almost universal opinion, well-defined peculiarities upon the pulse. These peculiarities he thus describes.

The Pulse in Disease of the Mitral Valve.—When the mitral valve is contracted, and also when it admits of free regurgitation, the pulse is, in various degrees, small, weak, irregular, intermittent and unequal. When either the contraction or the regurgitation is great, the whole of these characters are invariably present. But when the degree of either is slight, (when, for instance, the circumference of the orifice is not diminished more than an inch, or when the aperture for regurgitation is not larger than a goose-quill,) the effect on the pulse may only be a slight degree of weakness and intermittence, increasing when the circulation is hurried.

" Certain other affections, besides disease of the mitral valve, may render the pulse small, weak, intermittent, irregular, and unequal. These exceptions and their diagnosis must, therefore, be briefly noticed. 1. Softening of the heart, as already shown, may occasion all the above characters of the pulse in the highest degree; it may be known by the absence of valvular murmurs. When softening co-exists with mitral disease, the two will, of course, co-operate in producing the pulse in question. 2. The same pulse may be produced by pericarditis with copious effusion compressing the heart, by endocarditis causing

polypi in the cavities (Bouillaud,) and by polypus in any other disease of the heart. These diseases may be severally known by their own characteristic symptoms, and by the sudden supervention of the state of pulse. 3. Dyspepsia, nervousness, biliousness, and gout may respectively occasion several, or all of the above qualities of the pulse ; they may be known by the attacks of irregularity being only occasional and temporary, and by the absence of valvular murmurs." 378.

The Pulse in Contraction of the Aortic Valves.—"Contraction of the aortic valves must be very great to render the pulse small, weak, intermittent and irregular. I have never seen it possess these characters in any marked degree, unless the valves were either soldered together by cartilaginous degeneration, or more or less fixed by ossification in the closed position, so that the aperture was only a limited chink. An induration of the size of an ordinary pea, has little effect on the fulness, firmness, and regularity of the pulse, and slighter degrees of contraction appear to have no effect on it whatever." 378.

The Pulse in Regurgitation through the Aortic Valves.—Such regurgitation, including that out of the aorta into the right ventricle, or into the pulmonary artery produces a pre-eminently *jerking* pulse, a high degree of the pulse of unfilled arteries, as seen in anæmia from any cause. The diastole or beat of the artery is short and quick, as if the blood were smartly jerked or shot under the finger, the vessel during the intervals feeling unusually empty. This is the most remarkable, appreciable, and constant pulse produced by disease of the heart. In the immense majority of cases, the practitioner may conjecture the disease by this sign alone. It differs from the jerking pulse of anæmia, in being more marked, and in not necessarily being frequent, as the anæmic pulse is, when its jerk is distinct. It may be absent, or scarcely appreciable, if the regurgitation be very slight; and it may be neutralized by free mitral regurgitation or great contraction, in consequence of the enfeebling effects of these lesions on the pulse.

Valvular Disease of the Right Side produces, for obvious reasons, little effect on the pulse.

c. "Pain in the region of the heart is another symptom that affords presumptions of disease of the valves. It is true that palpitation or engorgement of the heart may occasion pain, though there be no disease of the valves: I have frequently met with it from these causes in hypertrophy and dilatation. It is likewise true that palpitation may occasion pain, though there be no disease of the heart whatever; I have found it in a large proportion of hysterical, anæmic females and nervous males. But it is when the valves, the coronary arteries, or the commencement of the aorta, are indurated and inelastic, that pain occurs most frequently and with the greatest severity. Sometimes it is little more than an indescribable sense of obstruction or oppression in the præcordial region; but, in other cases, it is an intense lancinating or tearing pain, felt across the præcordia or scrobiculus cordis, (where it might be mistaken for inflammation of the stomach,) and occasionally extending, with a sense of numbness, down the inside of the left arm to the elbow, and sometimes to the fingers. Pain of this description has acquired the name of *angina pectoris*." 381.

Of the progress, terminations, and prognosis of valvular disease, it is, unfortunately, needless to speak. They are too familiar. We therefore pass on to the—

Physical Signs.—Dr. Hope informs us that the accession of auscultation to the other means of diagnosis, has rendered it possible to distinguish valvular disease, both in general and particular, with almost complete certainty.

Signs of Disease of the Aortic Valves.—One of the various murmurs, *bellows*, *filing*, *sawing*, *rasping*, and *musical*, or *whistling* is heard, writes Dr. Hope, during the ventricular contraction, (i. e. with the first sound,) on the sternum, opposite to the lower margin of the third rib, and thence for about two inches or more upwards, along the course of the ascending aorta towards the right; and it is louder in these situations than below the level of the valves. Its pitch or key is usually that of a whispered *r*, from being superficial, and it accordingly conveys the idea of being pretty near to the ear. When a murmur of this kind is considerably louder along the tract of the ascending aorta than opposite to its valves, and is, at the same time, unusually near sounding and superficial—in other words, on a higher key than a whispered *r*, it proceeds from disease of the ascending aorta itself. As the murmur from this cause is audible in the situation of the valves, it might lead to the supposition that they also were diseased, and it is sometimes very difficult to ascertain positively that they are not. That a murmur is seated in the aorta, and not in the pulmonary artery, may be known by its being inaudible or very indistinct high up the course of the pulmonary artery, while it is distinct high up that of the aorta. That a murmur is seated in the aorta or its valves, and not in the auricular valves, may be known by its sounding loud and *near* above the aortic valves, where an auricular murmur, if audible at all, sounds feeble, *remote*, and on a low key, like a whispered *who*.

"When," he continues, "there is regurgitation through the permanently open aortic valves, a murmur accompanies the second sound, and its source may be known by the following circumstances: 1. It is louder and more superficial opposite to and above the aortic valves than about the apex of the heart, by which it is distinguished from a murmur in the auricular valves with the second sound. It is louder along the course of the ascending aorta than along that of the pulmonary artery, and down the tract of the left ventricle than down that of the right; by which circumstances its seat is known to be in the aortic, and not in the pulmonic valves. This inference is strongly corroborated by the state of the pulse, which, when the aortic regurgitation is at all considerable, is singularly and pre-eminently jerking—the pulse of unfilled arteries. 3. It is distinguished from a systolic murmur in the aortic orifice by its accompanying the second sound; by its being more audible, (though with a gradual diminution,) down the course of the ventricle, than a systolic murmur; by its being prolonged through the whole interval of repose, and even through accidental intermissions of the ventricular contraction (case of W. Esq.); and by the weakness of the refluent current always imparting to it the softness of the bellows-murmur, an inferior degree of loudness, and a lower key, like whispering the word *awe* during inspiration. It often becomes musical.

Purring tremor, though necessarily produced by any considerable, salient, or rugged contraction of the aortic valves, can rarely be felt, because the sternum is interposed; but when the heart is displaced from beneath the sternum, as by hydrothorax, empyæma, emphysema, tumours, consolidation and contraction of one lung and hypertrophy of the other (case of James), &c. the tremor may then become perceptible (case of Mitchell). I have never known it accompany aortic regurgitation." 385.

Signs of Disease of the Pulmonic Valves.—"The signs of contraction of the pulmonic valves are the same as those of the aortic, with this difference; that, from the vessel being nearer the surface, the murmur with the first sound seems *closer* to the ear, and is on a higher key, ranging from the sound of a whispered *r* towards that of *s*. I have, however, known it fall below *r* when the circulation was feeble and slow, and the obstruction slight. It may be known that the murmur is not seated in the aorta, by its being inaudible, or comparatively feeble, two inches up that vessel; whereas, at a corresponding height up the pulmonary artery, it is distinct: also, by its being louder down the tract of the right ventricle than down that of the left. It may be known that the murmur does not proceed from regurgitation through the auricular valves, by its being distinct along the course of the pulmonary artery, where auricular murmurs are either wholly inaudible, or very feeble and remote.

When a murmur in the pulmonary artery is considerably louder between the second and third left ribs, close to the sternum, than opposite to the valves, and is there attended with impulse and purring tremor, dilatation of the pulmonary artery may be suspected. In one instance I have known a murmur to be produced by complete ossification of the pulmonary artery penetrating deeply into the lungs.

When there is regurgitation through the pulmonic valves, a murmur accompanies the second sound. Its nature and diagnosis are the same, (the necessary inversions being made,) as in the case of aortic regurgitation, except that the pulse is not jerking." 386.

Disease of the pulmonic valves is so rare that it should not be suspected unless the signs are perfectly marked, or some communication exists between the two sides of the heart.

Signs of Disease of the Mitral Valve.—"When the valve is permanently open, admitting of regurgitation, the first sound is attended with a murmur. It may be rough, (rasping,) or smooth, (bellows-murmur,) according to the nature of the contraction, &c. Its key is low,—more or less like whispering *who;* yet it sounds loud and *near* if explored about the apex of the heart, and a little to the sternal side of the nipple. It may thus be easily distinguished from a direct semilunar murmur, which, in this low situation, always sounds feeble and *distant.* The murmur in some cases completely drowns the natural first sound on the left side: in others, the sound can be distinguished at the commencement of the murmur." 387.

Dr. Hope has found perceptible purring tremor produced more frequently by regurgitation through the mitral valve than by any other valvular lesion, especially when the ventricle was hypertrophied and dilated.

"When the mitral valve is considerably contracted, a murmur (best heard in the same situation as the murmur from regurgitation, and distinguishable in the same way from semilunar murmurs,) attends the ventricular diastole and second sound. From the weakness, however, of the diastolic current out of the auricle, the murmur is always very feeble, soft like the bellows-sound, and usually on a rather lower key than a whispered *who.* I have found this murmur absent unless the contraction of the valve was considerable; for the blood had still sufficient room to pass with tranquillity; and I have also found it absent when the contraction was *great*—when, for instance, the aperture admitted one finger only, or merely a quill, provided the current was preternaturally weakened by softening, by extreme dilatation of the heart, or by both. In such cases, however, the mitral disease would not be overlooked, as there is almost invariably a murmur from regurgitation. On the whole, this murmur is exceedingly rare." 388.

Signs of Disease of the Tricuspid Valve.—They are the same as those of the mitral, except that the murmurs are loudest on or near the sternum, at the same level as in the case of the mitral—namely, about or a little above where the apex beats. But as the tricuspid valve is rarely so much diseased as to cause a murmur, the practitioner must be very cautious how he pronounces it affected.

Signs of Disease of the Arterial and Auricular Valves conjointly.—The murmurs, says our able author, above described as characteristic of each, exist simultaneously in both. The auscultator has merely to take especial care that he explores the arterial murmurs as high up the vessels, and the auricular murmurs as low down the heart as possible. He will thus readily satisfy himself that there are two distinct sources of murmur. It is still easier to determine this, if the murmur attending either sound be of a different *species* in the two situations—if, for instance, the murmur of the aortic or pulmonic valves be of the *soft* bellows-kind, while that of the auricular valve is of the *rough*, grating or rasping kind, or *vice versâ*.

Diagnosis of Valvular from Inorganic Murmurs.—Bellows-murmur sometimes exists in the heart, without valvular disease, in anæmic persons, who are generally nervous—in excessive hæmorrhage, and the re-action following it—and in a few cases of hypertrophy with dilatation.

"Murmur from these causes may easily be distinguished from that of valvular disease by the following criteria.

1. It is confined to the aortic orifice, (so far as I have yet discovered,) and to the first sound. Here is one of the great advantages of *particular* valvular diagnosis, as the auscultator can at once exclude the other seven murmurs to which the heart is liable from organic causes only.

2. *It is always weak, and of the soft or bellows kind.*

3. In the anæmic, it is almost invariably attended with a continuous venous murmur in the jugulars, and mostly with a short bellows-whiff, in the carotids, subclavians, and other principal arteries, synchronous with the first sound of the heart.

4. It exists in the anæmic during temporary excitement of the circulation only, subsiding when palpitation ceases and the pulse falls to its natural standard; but as the pulse is permanently quick in considerable anæmia affecting irritable, nervous subjects, especially females; also during the period of reaction after excessive loss of blood, the murmur will persist until the pulse falls by the subsidence of the states in question.

5. The murmur, both of the heart, arteries, and veins, wholly ceases when the anæmia is cured by iron and animal food, the venous murmur being the last that becomes extinct.

When a murmur proceeds from hypertrophy with dilatation, it may be known by its diminishing or ceasing when the action of the heart is calmed, as by repose, venesection, digitalis, &c. In most, if not all cases, this murmur is dependent merely on anæmia, which is very apt to supervene in the advanced stages of hypertrophy with dilatation.

Contrasted with the above, the distinctive characters of valvular murmurs are, 1. That they are not, like inorganic murmurs, restricted to the aortic orifice and first sound, but may be connected with any of the four orifices and with either sound in each: 2. That they persist without intermission for an indefinite length of time, even though the heart be kept in a state of perfect calm: 3.

That they are often of a *rough* character, that is, filing or rasping; whereas, inorganic murmurs have always the softness of the bellows-sound.

Such are the signs which, together with the general symptoms, are, according to my experience, the best for the detection of the diseases of the valves. In the first edition of this work, where the signs were less fully developed, I was enabled to say that 'for several years they had never deceived me as to the general fact whether there was or was not valvular obstruction, and that they had seldom failed to indicate, with perhaps more than necessary precision, the situation of the affection.' I may now venture to add, that, with the improvements introduced in the present edition, the particular diagnosis is even more easy and certain than the general; because a practitioner competent to make the latter only, is more liable to be deceived by inorganic murmurs." 390.

These must be admitted to be very valuable additions to our means of diagnosis in diseases of the heart.

In the following remarks upon the value of an accurate diagnosis, we quite coincide with Dr. Hope. But their application need not be restricted to this particular case. It may be made more wide, and tell as truly of other diseases, as of valvular affections of the heart.

"If it be said that particular valvular diagnosis is a useless refinement, it may be replied that non-auscultators used to say the same of auscultation in general. The truth is, that every improvement in diagnosis is an advantage to the practice of medicine. No one, for instance, will deny the importance of distinguishing inorganic from organic murmurs, as the treatment for the two is diametrically opposite; and this distinction, it has been shown, is remarkably facilitated by particular valvular diagnosis. Again, the pulse, without particular diagnosis, is unintelligible even to the most learned, as Corvisart, Laennec, &c., and has betrayed them into grievous practical errors. Further, disease of certain valves is more injurious and dangerous than that of others. Unless, therefore, the practitioner is able to specify the valve diseased, he cannot nicely adapt his treatment to the exigencies of the case, but must in some instances be uselessly rigid, and in others dangerously lax." 391.

As an appendix, Dr H. adverts to a few unusual and curious sources of murmur, independent of valvular disease, which might be sources of fallacy.

"1. I had a patient in the St. Mary-le-bone Infirmary, in whom I, as well as the apothecary Mr. Hutchinson, noticed a distinct murmur along the ascending aorta on some occasions, and not the slightest on others. I was much perplexed, and could not make up my mind as to the existence of valvular or aortic disease. The patient died of phthisis, and on post-mortem examination, it was found that the anterior edge of the left lung, completely indurated by tubercular deposition, pressed so exactly on the ascending aorta as actually to have taken its mould though without adhering. It was now recollected that the murmur had always been heard when she lay on her back or inclined to the right side, but not when inclined to the left; hence we ascribed it to pressure of the lung on the aorta when the position of the body caused it to gravitate towards the right side.

2. Two students of University College called on me, one with slight hypertrophy with dilatation, and violent palpitation from great nervous excitability,—the pulse, for instance, being 120; the other was exempt from organic disease, but affected with violent nervous palpitation, the pulse here also being 120.—Both wore very tight waistcoats, preventing the expansion of the lower ribs. During this state of breathing, with the lungs insufficiently inflated, a slight bellows-murmur with the first sound over the semilunar valves existed in both. It was not, however, *exactly* synchronous with that sound, but began an instant

later, as if from a separate cause. In both, the murmur ceased *entirely* when, unbuttoning their waistcoats and waistbands of their trowsers, they breathed with the lungs naturally inflated. By alternating the circumstances, the murmur could be created or removed at pleasure. I presume, therefore, that it proceeded from a cause exterior to the heart ; and, as the murmur was an instant later than the first sound, the most probable appears to be, that, in the contracted state of the chest, the violent beats of the heart compressed the lung, and, by suddenly expelling its air, created a murmur.

3. Dr. Elliotson mentions two or three cases somewhat analogous. In one —a case of ascites—a bellows-murmur with the first sound, in the region of the left ventricle, instantly ceased on the removal of the fluid from the abdomen; but when it re-accumulated, the sound again became audible. In another case—a young woman with chronic bronchitis, dyspnœna, livid lips and œdematous legs—no murmur existed while she was erect, but it became audible the moment she lay down (Lum. Lecs. p. 18). Dr. Elliotson conjectures that, in the first case, the elevation of the heart by the abdominal fluid might have tilted the organ to an angle with the commencement of the aorta ; and, in the second case, he thinks that the cessation of the murmur when the patient was erect, depended on the ventricle being, by gravitation, drawn down more into a straight line with the aorta, when an easier exit was given to the blood. Another conjecture in which he indulges, but to which I cannot assent, is, that dilatation of the right auricle, by pressing against the aorta, might have occasioned the murmur in both.

I have not data by which to decide these points, but the practical inference is, that, in cases of slight bellows-murmur with the first sound, and connected with the arterial orifices, (for the fallacy cannot apply under any other circumstances,) we should not decide till we have ascertained that the murmur continues in the erect as well as the recumbent position, and also while the chest is totally unrestrained by ligatures. I have at present a case of an exceedingly anæmic girl, æt. 17, in whom a venous murmur in the vena innominata was propagated down the great vessels, especially the pulmonary artery, and led a young auscultator into the error of supposing that there was disease of the pulmonic valves." 393.

We have presented the whole, or almost the whole, of Dr. Hope's observations on the diagnosis of valvular diseases of the heart. They tend to throw an unexpected degree of light on affections which before were most obscure, and indeed were given up as enfans perdus in diagnosis.

If we do not at present notice other portions of the volume, it is because the present is not quite a convenient opportunity to do so. We shall couple Dr. Hope's with some other work, and extract such facts or such observations (and they are many) as elucidate a most important, and often an exceedingly obscure class of diseases. In the mean time we recommend this edition very strongly to our readers.

ANATOMY AND PHYSIOLOGY.

1. THE CYCLOPÆDIA OF ANATOMY AND PHYSIOLOGY. Edited by *Robert Todd*, M.D. F.R.S. &c. &c. Parts XV. XVI. XVII. and XVIII.

WE have hitherto omitted noticing the latter Parts of this excellent work. This has been owing to the press of other matter, for the work itself has maintained its character and continued to do credit to its writers and its editor.

We shall select from among the articles contained in the Parts before us, two or three of a physiological, and generally interesting character. Our senior readers will not, perhaps, be displeased at occasionally having the opportunity afforded them of bringing up their knowledge of physiology to the actual level of the day.

The first subject to which we shall allude is hibernation. It has been treated very happily by Dr. Marshall Hall, who has devoted, as our readers must be well aware, considerable pains and his usual talents to its investigation.

I. ON HIBERNATION.

Dr. Hall observes:

"It has not hitherto been distinctly ascertained to what extent the state of hibernation prevails in the animal kingdom; the bat, the hedgehog, and the dormouse, are the genera which present us with the most marked examples of this singular physiological condition in this country; to these the elegant authoress of 'Sketches of Natural History,' has added the water-rat and the wood-mouse, observing of the former—

> "And when cold winter comes and the water-plants die,
> And his little brooks yield him no longer supply,
> Down into his burrow he cozily creeps,
> And quietly through the long winter-time sleeps."

The following quotation will be found to afford the key to Dr. Hall's views on the nature of hibernation. It is long but indispensable.

"There is in my opinion, an ultimate *law* of animal existence, which seems to regulate the different forms in which the different classes of animals present themselves. The quantity of respiration is inversely as the degree of irritability of the muscular fibre, the former being marked by the quantity of oxygen consumed in a given time, ascertained by the pneumatometer, the latter by the force of galvanism necessary to demonstrate its existence. The bird tribes have a high respiration and a low irritability; the reptiles have a high degree of irritability and little respiration. This law obtains not only in the different tribes of animals, but also in the different stages or states of the same individual, the *structural* changes from one stage to another being always a change from a lower to a higher respiration, and from a higher to a lower degree of irritability, and the change of state, a change in the opposite direction: thus the changes from the egg to the bird, from the tadpole to the batrachian form, from the larva to the chrysalis and the insect condition, are changes in which, whilst a due ratio is constantly maintained, the quantity of respiration is augmented and the de-

gree of irritability diminished; on the other hand, the *physiological* changes in the degree of activity in animals, during sleep, for example, but especially in that remarkable change which is the subject of this article, the respiration is diminished whilst the degree of irritability is, *pari passu*, augmented.

On what this susceptibility of change depends, and especially on what the power of taking on an augmented irritability depends, is at present unknown. But I think I may affirm that it is upon this power that the capability of passing into the state of hibernation reposes. I suppose that all animals have the faculty of sleeping; during sleep the respiration is slightly diminished, the irritability probably proportionately augmented—probably one ultimate object of this state of repose; but the phenomenon has its appointed limit which it cannot pass. In certain animals. that limit is not so confined,—the quantity of respiration is still further diminished, the degree of irritability still further augmented, and the deeper sleep, or lethargy, of hibernation takes places.

During this lethargy, the law of the inverse ratio of the respiration and of the irritability still prevails, and the animal merely puts on a reptile state in these respects. Were the respiration to be diminished without the appointed augmentation of the irritability, the heart would cease to be stimulated, and the animal would die, as in the case of torpor and slow asphyxia; were the respiration augmented without the proportionate diminution of the irritability, the heart would be over-stimulated, and death would alike ensue, as in the case of a hibernating animal too suddenly roused from its lethargy, and as (probably) in the case of an animal placed in pure oxygen gas.

The difference between the hibernating and all other animals then is, an ultimate faculty of assuming an augmented degree of irritability of the muscular fibre—a power possessed by all animals within certain limits, but by the hibernating animal beyond the usual limit." 765.

This is the dominant idea of the article. It has been generally believed that hibernation depends on the animal's not being able to generate heat sufficiently to resist a low temperature. Dr. Hall lays it to the faculty of assuming an augmented degree of irritability of muscular fibre. It must be owned that neither theory explains the phenomenon satisfactorily. Milne Edwards, the advocate of the former, remarks:—"Nous voyons que les chauves-souris produisent habituellement moins de chaleur que les animaux à sang chaud, et que c'est principalement à cette cause qu'il faut attribuer l'abaissement de leur température pendant la saison froide. En comparant cette expérience sur la chauve-souris adulte avec celles que nous avons faites sur les jeunes animaux à sang chaud, on y aperçoit un rapport remarquable; ils ne produisent pas assez de chaleur pour soutenir une température élevée, lorsque l'air est à un degré voisin de zéro. Mais il y a cette difference, que c'est un état passager chez les jeunes animaux à sang chaud, et qu'il est permanent chez les chauves-souris.

"Il est évident que les autres mammifères hibernans doivent participer plus ou moins de cette manière d'etre. Les faits que j'ai exposés suffisent pour nous faire considérer ce groupe d'animaux sous le point de vue suivant; qu'au printemps et en été, dans leur état d'activité et de veille, lorsque leur température est assez élevée pour ne pas différer essentiellement de celle qui caractérise les animaux à sang chaud, ils n'ont pas la faculté de produire autant de chaleur; et tout en admettant que d'autres causes peuvent influer sur leur refroidissement pendant leur hibernation, il faut cependant l'attribuer en grande partie à cette particularité de leur constitution." But as Dr. Hall observes this explanation would account for torpor, a pathological

and a fatal state, not for hibernation, a natural and a harmless one. Dr. Hall's own explanation does little more than put the fact of hibernation in scientific terms—when analysed it resolves itself into the expression, *that* certain animals have the power of hibernating. To say that the irritability of the muscular fibre is increased, is to say little else than all were aware of, for as the heart was known to beat while the respiration was imperfect, and the changes in the blood incomplete, it followed of course that the heart contracted under the influence of a feeble stimulus, or, in other words, that its irritability was augmented.* The *how* is left involved in the same obscurity as heretofore; indeed, supposing Milne Edwards's explanation unobjectionable, it would be more satisfactory as an explanation than that of Dr. Hall.

This gentleman not only compares hibernation with sleep, but he even goes so far as to believe that it is nothing but profound sleep. He says:—Hibernation appears more extraordinary only because less familiar than sleep. Most animals are, in fact, naturally awake and asleep every revolving day, some being diurnal, others nocturnal. But in summer the bat actually hibernates, loses its respiration, and with its respiration its temperature, acquires vastly augmented irritability, and presents the other phenomena of *complete* hibernation, regularly and periodically every twenty-four hours; and the hedgehog and the dormouse present similar phenomena, only after other intervals.

This would seem to shew that Dr. Hall looks on the law of periodicity, whatever that may be, as being essentially the law of hibernation. He holds the influence of diminished temperature cheap. He goes on to state:—

"Sleep then is the first stage of hibernation. The faculty of passing into the second is identical with that of assuming a greatly augmented irritability of the muscular fibre. Such are the results of my long attention to this interesting physiological question. Much error has arisen from viewing hibernation as a simple effect of cold. The influence of cold in inducing hibernation is merely its well-known influence in inducing sleep, concurring with the other causes of this condition. The direct effect of cold on the animal frame is, as I shall shortly have occasion to state particularly, totally different from hibernation. Hibernation is a physiological condition; the direct effect of cold, or *torpor*, is, on the contrary, a pathological and generally a fatal one.

The term hibernation has usually been applied to designate what its etymology implies, the condition in which certain animals pass the *winter* season. An error is, as I have already stated, involved in this view of the subject; for the condition termed hibernation is not confined to the winter season. Cuvier observes, in speaking of the Tenrecs, 'ce sont des animaux nocturnes qui passent trois mois de l'anné en lethargie, quoique habitants de la zône torride. Burguière assure même que c'est pendant les grandes chaleurs qu'ils dorment.' Hence the term *Sommerschlaf*, employed in Germany. It is plain too, from this circumstance, that the state of hibernation is not necessarily connected with a low degree of external temperature, and we are surprised to find this celebrated naturalist, whom I have just quoted, observing, 'la seule condition de la lethargie est le froid et l'absence des causes irritantes.'

I must repeat that hibernation is, in every respect, but the parallel of ordinary sleep, varying only in force and duration. It is equally modified by co-operating

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* It must, on consideration, be obvious to Dr. Hall himself, that he has enunciated no new law. We were all aware that the reptilia and amphibia whose blood is but semi-aerated are distinguished for irritability of muscular fibre.

or opposing causes; and it is equally manifested in its peculiar effects, only varying in degree and intensity." 766.

Dr. Hall goes on to remark that, to understand hibernation, we must look at it as it affects every function; and he deems it necessary to ascertain first what sleep, the initiative of hibernation, is. Sleep affects the cerebral system only—the true spinal, or excito-motory retains all its energies. But, he remarks, in the state of activity, the cerebral system exerts a peculiar and continual influence over the true spinal, which ceases during sleep. In this manner the functions of the latter appear impaired; the respiration especially, and with the respiration the circulation, with which it always maintains a certain relation, becomes slower, irregular, and suspended at intervals. These phenomena observable in ordinary sleep are still more remarkable in the deep sleep or lethargy of hibernation or diurnation.

Of the Sleep of Hibernating Animals.—Dr. Hall states, as the result of his own observations, *that*, in the sleep of the hibernating animal, the respiration is more or less impaired: if the animal be placed in circumstances which best admit of observation, the acts of respiration will be found to have greatly diminished; if it be placed in the pneumatometer, little alteration is induced in the bulk of the air; if its temperature be taken by the thermometer, it will be found to be many degrees lower than that of the animal in its active state; if it be deprived of atmospheric air, it is not immediately incommoded or injured.

"The bat, which is a crepuscular or nocturnal feeder, regularly passes from its state of activity to one which may be designated *diurnation*. The respiration and the temperature fail; the necessity for respiration is greatly lessened.

During the summer of 1831, I carefully observed a bat in this condition. If it were quite quiet, its respiration became very imperfect; its temperature was but a few degrees above that of the atmosphere; being placed under water, it remained during eleven minutes uninjured, and on being removed became lively and continued well.

I have more recently watched the habits of two hedgehogs, in a temperature varying from 45° to 50°. These animals alternately awake, take food, and fall asleep. One of them is frequently awake, whilst the other is dormant, and goes to sleep at a time that the other awakes, but without regularity. When awake, the temperature of each, taken by pressing the bulb of a thermometer upon the stomach, is about 95°: when dormant, it is 45°; that of the atmosphere being 42° to 43°. The duration of this sleep is from two to three days, according to the temperature of the atmosphere. On the 4th of February, 1832, the temperature of the atmosphere being 50°, both the hedgehogs were dormant,—the temperature of one was 51°, and that of the other 52°; on the succeeding day, the temperature of the atmosphere had fallen one degree, the temperature of one of the hedgehogs was 49°, whilst that of the other, which had become lively, had risen to 87°; on the succeeding day, the first had become somewhat lively, and its temperature had risen to 60°, that of the other being 85°, and that of the atmosphere 47°.

I have observed precisely the same alternations in the dormouse; except that this animal awakes daily in moderate temperatures, takes its food, and re-passes into a state of sleep, in which the respiration is greatly impeded, and the temperature little higher than that of the atmosphere.

On the day on which the observations were made on the hedgehogs, the atmosphere being 49°, that of two dormice was 52°; on the succeeding day, the external temperature being 47°, that is, lower by two degrees, the temperature

of one of these dormice was 92°, and that of the other 94°; and only three hours afterwards, the temperatures were 60° and 70° respectively, with a slight appearance of lethargy.

The hedgehog and the dormouse appear, in fact, to awake from the call of hunger, then to eat, and then again to become dormant, in temperatures which may be termed moderate. The bat, which could not find food if it did awake, does not undergo these periodical changes, except in the summer season. It appears to me, from the most careful observation, that there is every degree between the ordinary sleep of these animals and the most profound hibernation.

It is quite obvious, from these observations, that the ordinary sleep of hibernating animals differs from that of others, by inducing a more impaired state of the respiration and of the evolution of heat, with an augmented power of bearing the abstraction of the atmospheric air. This sleep probably passes into true hibernation, as the blood which circulates through the brain becomes more and more venous, from the diminution of the respiration, and as the muscular fibre of the heart acquires increased irritability." 767.

Dr. Hall continues:—

It is absolutely necessary, in comparing the powers of hibernating and other animals, of evolving heat, accurately to observe whether there be any tendency to sleep. Mr. Hunter's and M. Edwards's experiments are deficient for want of this attention. Mr. Hunter, comparing the common mouse and the dormouse, exposed to a very low temperature, observes, that the temperature of the former was "diminished 16° at the diaphragm, and 18° in the pelvis; while in the dormouse it gained five degrees, but lost on a repetition." The explanation of these facts is afforded by the observation, that when the dormouse increased in temperature it was "very lively," but that on the "repetition" it had become "less lively;" the mouse was probably in a state of languor from apprehension or for want of food.

M. Edwards omits to mention whether the hibernating animals, in his experiments, were disposed to be lively or dormant, or whether they had recently recovered from the dormant state. He does not even mention whether the experiments on the bat were performed in the evening, its period of activity, or in the morning or day, its period of lethargy or diurnation. Without a particular attention to these points, no correct result could be obtained. The hibernating animal, in a state of vigour and activity, is a totally different being from the same animal disposed to become dormant.

In order to perform this experiment in a satisfactory manner, the bat, for example, should be employed in the evening, when it has naturally awoke from its deep day-slumber, the hedgehog when it has awoke spontaneously to take food; otherwise the disposition to sleep may explain the loss of temperature.

Of Perfect Hibernation.—Dr. Hall offers as the abbreviated result of a series of observations and experiments made in the course of the years 1831-2, *that*, there is *one* special cause of hibernation,—that law imposed by the Creator, according to which *all* animals become affected with sleep at some period of each revolving day, and the hibernating animal at some period of the revolving year. We have thus presented to us the phenomena of diurnal and nocturnal animals, and the winter-sleep and the summer-sleep of hibernating animals.

Exposure to cold, not too severe, disposes to hibernation, as it disposes to

ordinary sleep. Severe cold, on the contrary, first rouses the hibernating animal from its lethargy, and then plunges this and all animals into a state of fatal torpor.

The absence of every kind of stimulus or excitant, and a somewhat confined atmosphere,* also conduce to hibernation.

Every excitement, on the contrary, that of hunger, that of the sexes probably, tend to disturb this peculiar lethargy. It is in this manner that we explain the periodicity of sleep and hibernation, though there is probably also some hidden influence of the seasons, of the day or of the year, influences which have been traced by Dr. Prout and by M. Edwards in regard to the quantity of respiration.

Dr. Hall proceeds to examine the influence of hibernation on the several functions.

A. *Sanguification.*—"There is much difference," says our author, "in the powers of digestion, and in the fact of omitting to take food, in the hibernation of different animals. The bat, being insectivorous, would awake in vain; no food could be found: the hedgehog might obtain snails or worms, if the ground were not very hard from frost: the dormouse would find less difficulty in meeting with grain and fruits. We accordingly observe a remarkable difference in the habits of awaking from their lethargy or hibernation, in these different animals.

I have observed no disposition to awake at all in the bat, except from external warmth or excitement. If the temperature be about 40° or 45°, the hedgehog, on the other hand, awakes, after various intervals of two, three, or four days passed in lethargy, to take food; and again returns to its state of hibernation. The dormouse, under similar circumstances, awakes daily.

Proportionate to the disposition to awake and take food, is the state of the functions of the stomach, bowels and kidneys. The dormouse and the hedgehog pass the fæces and urine in abundance during their intervals of activity. The bat is scarcely observed to have any excretions during its continued lethargy.

In the dormouse and the hedgehog, the sense of hunger appears to rouse the animal from its hibernation, whilst the food taken conduces to a return of the state of lethargy. It has already been observed, that there are alternations between activity and lethargy in this animal, with the taking of food, in temperatures about 40° or 45°. Nevertheless, abstinence doubtless conduces to hibernation, by rendering the system more susceptible of the influence of cold, in inducing sleep and the loss of temperature. The hedgehog, which awakes from its hibernation, and does not eat, returns to its lethargy sooner than the one which is allowed food." 769.

Dr. Hall observes that the *respiration* is nearly suspended in hibernation, which is proved, 1st, by the absence of all detectable respiratory acts; 2dly, by the almost entire absence of any change in the air of the pneumatometer; 3dly, by the subsidence of the temperature to that of the atmosphere; and 4thly, by the capability of supporting, for a great length of time, the entire privation of air.

1. "I have adopted various methods to ascertain the entire absence of the acts

* M. de Saissy observes, "la marmotte, que j'ai engourdie par deux fois différentes, ne l'a été, je crois, que parceque je me suis avisé, quand la respiration a été bien affaiblie, de boucher le trou du couvercle. Ce n'a été que de cette manière que je suis parvenu à l'engourdir; car toutes les tentatives que j'avais faites avant ont été vaines."

of respiration. I placed bats in small boxes, divided by a partition of silk riband, the cover of which consisted of glass, and in the side of which a small hole was made to admit of placing a long light rod or feather under the animal's stomach. The least respiratory movement caused the extremity of this rod to pass through a considerable space, so that it became perfectly apparent.

Over the hibernating hedgehog I placed a similar rod, fixing one extremity near the animal, and leading the other to move freely over an index. During hibernation not the slightest movements of these rods could be observed, although they were diligently watched. But the least touch, the slightest shake immediately caused the bat to commence the alternate acts of respiration, whilst it invariably produced the singular effect of a deep and sonorous inspiration in the hedgehog. It is only necessary to touch the latter animal to ascertain whether it be in a state of hibernation or not; in the former case there is this deep sonorous inspiration; in the latter, the animal merely moves and coils itself up a little more closely than before. After the deep inspiration, there are a few feeble respirations, and then total quiescence. The bat makes similar respirations without the deep inspiration, and then relapses into suspended respiration.

2. As the acts of respiration are nearly suspended during hibernation, so are the changes induced in the atmospheric air.

On January the 28th, the temperature of the atmosphere being 42°, I placed a bat in the most perfect state of hibernation and undisturbed quiet, in the pneumatometer, during the whole night, a space of ten hours, from 1h. 30m. to 11h. 30m. There was no perceptible absorption of gas.

Having roused the animal a little, I replaced it in the pneumatometer, and continued to disturb it from time to time, by moving the apparatus It continued inactive, and between the hours of 1h. 20m. and 4h. there was the absorption of one cubic inch only of gas.

Being much roused at four o'clock, and replaced in the pneumatometer, the bat now continued moving about incessantly; in one hour, five cubic inches of gas had disappeared. It was then removed. A further absorption took place of ·8 of a cubic inch of gas.

Thus the same little animal, which in a state of hibernation, passed ten hours without respiration, absorbed or converted into carbonic acid, 5.8 cubic inches of oxygen gas in one hour when in a state of activity. In an intermediate condition, it removed one cubic inch of oxygen in two hours and forty minutes." 769.

Dr. Hall twice repeated the experiment with substantially similar results. For, 3.4 cubic inches of oxygen gas disappeared in sixty hours, from the respiration of a bat in the state of lethargy; while, during the state of activity of the animal, an equal quantity of the same gas disappeared in less than half that number of minutes.

"It may be a question whether the slight quantity of respiration I have mentioned be cutaneous. The absence of the acts of respiration would lead us to this opinion. But it may be observed, that these acts have not been watched, and can scarcely be watched continuously enough, to determine the question of their entire absence. Some contrivance to ascertain whether the rod has moved along the index during the absence of the observer would resolve every doubt upon this interesting point. And I think it right to remark, that after the apparent total cessation of respiration, as observed by the means which have just been described, there is probably still a slight diaphragmatic breathing. I am led to this conclusion, by having observed a slight movement of the flank in a favourable light, unattended by any motion of the thorax or epigastrium." 769.

4. Dr. Hall insists on the necessity of great precautions in ascertaining

the comparative temperature of the animal and of the atmosphere. He subjoins a table which gives the result of observations made during many days, in very varying temperatures. From this, he says, it is obvious that the temperature of the hibernating animal accurately follows that of the atmosphere. When the changes of temperature in the latter are slight, the two thermometers denote the same temperature. If these changes are greater and more rapid, the temperature of the animal is a little lower or higher, according as the external temperature rises or falls; a little time being obviously required for the animal to attain that temperature.

It is only necessary to add to these observations, that the internal temperature is about three degrees higher than that of the epigastrium. In two bats, the external temperature of each of which was 36°, a fine thermometer, with an extremely minute cylindrical bulb, passed gently into the stomach, rose to 39°.

4. It is not astonishing that the lethargic animal is enabled to bear the total abstraction of atmospheric air or oxygen gas, for a considerable period of time. Dr. Hall remarks that:—

Spallanzani placed a marmot in carbonic acid gas, and makes the following report of the experiment in a letter to Senebier: "Vous vous ressouviendrez de ma marmotte qui fut si fortement léthargique dans l'hiver sévère de 1795; je la tins alors pendant quatre heures dans les gaz acide carbonique, le thermomètre marquant—12°, elle continua de vivre dans ce gaz qui est le plus mortel de tous, comme je vous le disais: au moine un rat et un oiseau que j'y plaçai avec elle y perirent à l'instant même. Il-parait donc que sa respiration fut suspendu pendant tout ce tems-là. Je soumis à la même experience des chauve-souris semblablement léthargiques et le résultat fut le meme."

A bat which was lethargic in an atmosphere of 36° was immersed in water of 41°. It moved about a little, and expelled bubbles of air from its lungs. It was kept in the water during sixteen minutes, and then removed. It appeared to be uninjured by the experiment.

A hedgehog which had been so lethargic in an atmosphere of 40° as not to awake for food during several days, was immersed in water of 42°. It moved about and expelled air from its lungs. It was retained under the water during 22½ minutes. It was then removed. It appeared uninjured.

It seems probable that the motions observed in these animals were excited through the medium of the cutaneous nerves.

The power of supporting the abstraction of oxygen gas, or atmospheric air, belongs solely to the hibernating state, and is no property of the hibernating animal in its state of activity. Dr. Hall immersed an active hedgehog in water. It expired in three minutes, the period in which immersion proves fatal to the other mammalia.

5. "The *circulation* is reduced to an extreme degree of slowness, according to a law well-known, but hitherto, I believe, unexplained, according to which the respiration and the circulation are always proportionate to each other.

The wing of the bat affords an admirable opportunity of observing the condition of the circulation during hibernation. But it requires peculiar management. If the animal be taken from its cage, and the wing extended under the microscope, it is roused by the operation, and its respiratory and other movements are so excited, that all accurate observation of the condition of the circulation

in the minute vessels is completely frustrated. Still greater caution is required in this case than even in the observation of the respiration and temperature.

After some fruitless trials, I at length succeeded perfectly in obtaining a view of the minute circulation undisturbed. Having placed the animal in its state of hibernation, in a little box of mahogany, I gently drew out its wing through a crevice made in the side of the box ; I fixed the tip of the extended wing between portions of cork ; I then attached the box and the cork to a piece of plate-glass ; and lastly, I left the animal in this situation, in a cold atmosphere, to resume its lethargy.

I could now quietly convey the animal ready prepared, and place it in the field of the microscope without disturbing its slumbers, and observe the condition of the circulation.

In this manner I have ascertained that, although the respiration be suspended, the circulation continues uninterruptedly. It is slow in the minute arteries and veins ; the beat of the heart is regular, and generally about twenty-eight times in the minute.

We might be disposed to view the condition of the circulation in the state of hibernation as being reptile or analogous to that of the batrachian tribes. But when we reflect that the respiration is nearly, if not totally, suspended, and that the blood is venous, we must view the condition of the circulation as in a lower condition still, and, as it were, sub-reptile. It may, indeed, be rather compared to that state of the circulation which is observed in the frog from which the brain and spinal marrow have been removed by minute portions at distant intervals.

In fact, in the midst of a suspended respiration, and an impaired condition of some other functions, one vital property is augmented. This is the irritability, and especially the irritability of the left side of the heart. The left side of the heart, which is, in the hibernating animal, in its state of activity, as in all the other mammalia, only arterio-contractile, becomes veno-contractile.

This phenomenon is one of the most remarkable presented to me in the whole animal kingdom. It forms the singular exception to the most general rule amongst animals which possess a double heart. It accounts for the possibility of immersion in water or a noxious gas, without drowning or asphyxia ; and it accounts for the possibility of a suspended respiration, without the feeling of oppression or pain, although sensation be unimpaired. It is, in a word, this peculiar phenomenon, which, conjoined with the peculiar effect of sleep in inducing diminished respiration in hibernating animals, constitutes the susceptibility and capability of taking on the hibernating state. On the other hand, as the rapid circulation of a highly arterialized blood in the brain and spinal marrow of birds probably conduces to their activity, the slow circulation of a venous blood doubtless contributes to the lethargy of the hibernating animal." 772.

6. When we turn to the *nervous system*, our author assures us that sensaton and volition are quiescent, while the excito-motory, the true spinal system, retains its energy. Thus the slightest touch applied to one of the spines of the hedgehog immediately rouses it to draw a deep inspiration. The merest shake induces a few respirations in the bat. The least disturbance, in fact, is felt, as is obvious from its effect in inducing motion in the animal.

It is from misconception on this point that the error has arisen, that the respiration is not absolutely suspended in hibernation. This function has been so readily *re-excited*, that it has been considered as appertaining to the state of hibernation.

7. In the midst, says our able physiologist, of a suspended or partially

suspended respiration, the *irritability* of the muscular fibre becomes proportionately augmented.

The single fact of a power of sustaining the privation of air, without loss of life, leads alone to the inference that the irritability is greatly augmented in a state of hibernation. This inference flows from the law already stated, and the fact is one of its most remarkable illustrations and confirmations.

It might have been inferred from these premises, that the beat of the heart would continue longer after decapitation in the state of hibernation than in the state of activity in the same animal; an inference at once most singular and correct.

"This view," he continues, "receives the fullest confirmation from the following remarkable experiment: on March the 9th, soon after midnight, I took a hedgehog which had been in a state of uninterrupted lethargy during 150 hours, and divided the spinal marrow just below the occiput; I then removed the brain and destroyed the whole spinal marrow as gently as possible. The action of the heart continued vigorous during four hours, when seeing no prospect of a termination to the experiment, I resolved to envelope the animal in a wet cloth, and leave it until early in the morning. At 7 o'clock A.M. the beat of both sides of the heart still continued. They still continued to move at 10 A.M., each auricle and each ventricle contracting quite distinctly. At half-after 11 A.M. all were equally motionless; yet all equally contracted on being stimulated by the point of a penknife. At noon the two ventricles were alike unmoved on being irritated as before; but both auricles contracted. Both auricles and ventricles were shortly afterwards unirritable.

This experiment is the most extraordinary of those which have been performed upon the mammalia. It proves several interesting and important points: 1. That the irritability of the heart is augmented in continued lethargy in an extraordinary degree. 2. That the irritability of the left side of the heart is then little, if at all, less irritable than the right,—that it is, in fact, veno-contractile. 3. That, in this condition of the animal system, the action of the heart continues for a considerable period independently of the brain and spinal marrow.

On April the 20th, at six o'clock in the evening, the temperature of the atmosphere being 53°, a comparative experiment was made upon a hedgehog in its state of activity; the spinal marrow was simply divided at the occiput: the beat of the right ventricle continued upwards of two hours, that of the left ventricle ceased almost immediately; the left auricle ceased to beat in less than a quarter of an hour; the right auricle also ceased to beat before the right ventricle." 773.

Dr. Hall quotes from a paper of Mangili, in the Annals du Muséum, some further experiments strikingly corroborative of the preceding, and highly interesting in themselves. We shall seize the opportunity of quoting them:—

"J'observai à peu près les mêmes choses dans une autre marmotte en léthargie, que je décapitai le 22 de Mars, 1807. Mais en ouvrant celle-ci, j'avois deux objets; le premier, d'examiner l'état des viscères les plus importans, comme le cœur, les poumons et le cerveau. Le second étoit de voir comment procédent les phénomènes de l'irritabilité musculaire; parce qu'ayant entendu dire à un célèbre naturaliste, que l'engourdissement avoit pour cause l'alteration ou la suspension de cette irritabilité, il m'importoit de savoir si cette assertion étoit vraie. Dans la chambre où se trouvoit la marmotte, le thermomètre étoit à 6 degrés et demi; l'ayant introduit dans le bas ventre, il monta d'un degré, c'est-à-dire à 7 degres et demi.

Je trouvai le les poumons dans leur état naturel. Le cœur continua à battre pendant plus de trois heures. Les pulsations, d'abord vives et frequentes, s'affoiblirent et se ralentirent peu à-peu. J'en avois compté de seize à dix-huit par minute au commencement de la première heure; à la fin de la troisième je n'en comptois plus que trois dans le même temps. Les veins du cerveau me parurent gonflés de sang.

La tête unie au cou ayant été séparée du tronc, je la mis dans un vase avec de l'esprit-de-vin, et j'y remarquai, même après une demi heure, des movemens assez sensible. Ce fait prouve, ainsi que plusieurs autres dont je parlerai beintôt, que si dans l'état de léthargie conservatrice la vie est beaucoup moins énergique, le principe vital répandu dans les diverses parties, a beaucoup plus de tenacité, et tarde bien plus à s'éteindre.

Je séparai du corps de l'animal plusieurs morceaux des muscles qui obéissent à la volonté, et je vis avec étonnement que, trois heures après la mort, ils se contractoient fortement chaque fois que je les soumettois à l'action galvanique. Ces mouvemens convulsifs ne se ralentirent qu'au bout de quatre heures.

Il suit de là que les marmottes tuées pendant qu'elles sont en léthargie, présentent, relativement à l'irritabilité, à peu près les mêmes phénomènes qu'on remarque dans plusieurs animaux à sang froid.

Pour savoir ensuite si les phénomènes d'irritabilité étoient les mêmes dans l'état de ville et dans celui de léthargie, le 25 de Juin, j'ai fait périr, précisément de la même manière, une seconde marmotte qui étoit éveillée depuis deux mois, et qui faisoit de frequentes courses dans le jardin. Mon thermomètre marquoit ce jour-là 18 degrés: l'ayant introduit dans le ventre de la marmotte au moment où je venois de la décapiter, il s'éleva à 29 degrés.

Ayant mis le cœur à découvert, comme je l'avois fait dans mon expérience du mois de Mars, je comptai d'abord vingt-sept ou vingt-huit pulsations par minute. Ce nombre n'étoit plus que de douze au bout d'un quart d'heure, et de huit, au bout de demi-heure: dans les dix minutes suivantes, il n'y eut plus que quatre pulsations très-foibles par minute, et elles cessèrent totalement dans les dix dernières minutes, c'est-à-dire cinquante minutes après la mort de l'animal; tandis que le cœur de la marmotte tuée dans l'état de léthargie, donnoit encore quatre légères pulsations par minute, trois heures après que la tête avoit été séparée du corps. Cette grande différence prouve que le principe de l'irritabilité s'accumule pendant la léthargie conservatrice.

Les chairs musculaires me semblirent plus pâles que celles de la marmotte en léthargie: elles etoient d'abord très sensibles à l'action galvanique; mais ses signes d'irritabilité s'affoiblirent et disparurent bien plus rapidement. En effet les chairs musculaires de cette marmotte étoient peu sensibles au bout de deux heures, tandis que dans la marmotte tuée en hiver elles se contractoient fortement au bout de trois heures, et que l'irritabilité ne s'affoiblit notablement que quatre heures après la mort.

Les chairs des muscles intercostaux et abdominaux conservèrent leur sensibilité au stimulus électrique quelques minutes de plus que celles des membres; d'où l'on peut conclure que le principe de l'irritabilité se conserve d'avantage dans certaines parties du même animal. Mais ce qui est prouvé jusqu'à l'évidence c'est que ce principe a bien plus de ténacité dans les chairs de l'animal tué pendant l'état de léthargie, que dans celle de l'animal tué pendant l'état de veille."

Dr. Hall remarks on this curious, though from what we know of amphibia and reptiles, natural fact, that its due value can only be determined by observing the dependence of the functions of life on that law of the inverse condition of the respiration and of the irritability, of which so much has already been said. In the hibernating animal the respiration is nearly suspended; had not the irritability become proportionately augmented, the actions of life must have ceased!

8. The *motility* of the muscular fibre is unimpaired, Dr. H. assures us, in hibernation. If the hedgehog, he says, in a state of the most perfect lethargy, uncomplicated with torpor, be touched, its respiration is resumed, and it coils itself up more forcibly than before. The dormouse, in similar circumstances, unfolds itself; and the bat moves variously. Not the slightest stiffness is observed. The hedgehog, when roused, walks about, and does not stagger, as has been asserted. The bat speedily takes to the wing, and flies about with great activity, although exhaustion and death may subsequently result from the experiment. The phenomena are similar to those of awaking from natural sleep. Impaired motility, stiffness, lameness, &c. belong to torpor, and not to true hibernation.

3. *Of Reviviscence.*—Hibernation, observes Dr. Hall, induces a state of irritability of the left side of the heart, which, with high respiration and an arterialized blood, would be incompatible with life. Respiration suddenly restored, and permanently excited, is, therefore, as destructive as its privation in other circumstances.

"All those bats which were sent to me from distant parts of the country died. The continued excitement from the motion of the coach keeping them in a state of respiration, the animal perished. One bat had, on its arrival, been roused so as to fly about. Being left quiet, it relapsed into a state of hibernation. The excitement being again repeated the next day, it again flew about the room; on the succeeding day it was found dead.

It is in accordance with this law, that we observe hibernating animals adopting various measures to secure themselves from frequent sources of disturbance and excitement. They choose sheltered situations, as caverns, burrows, &c. secure from the rapid changes and the inclemencies of the weather and season. Many form themselves nests; others congregate together. The hedgehog and the dormouse roll themselves up into a ball. The common bat suspends itself by the claws of its hinder feet, with its head dependent, generally in clusters; the horseshoe bat (*ferrum equinum*) spreads its wings so as to embrace and protect its fellows.

All these circumstances are obviously designed to prevent disturbed hibernation.

In the depths of caverns, and other situations sheltered from changes of temperature in the atmosphere, the calls of hunger are probably the principal cause of reviviscence in the spring. The other causes of reviviscence are the return of warmth and external excitements: it is interesting to observe and trace the gradual return of respiration in the former case, and of the temperature of the animal in the latter.

If the hibernating hedgehog be touched even very gently, it draws a deep breath, and then continues to breathe for a short time. If this excitement be repeated, the animal is permanently roused, and its temperature raised. If the temperature of the atmosphere be augmented, the respiration is gradually excited, and the animal is gradually restored to its state of activity.

If a hibernating animal be excited in a very cold atmosphere, its temperature rises variously and then falls. A bat was perfectly lethargic in a temperature of 36°. A fine thermometer, with a cylindrical bulb, was introduced into its stomach; it rose to 39°. One hour afterwards, the animal not being further disturbed, the respiration was rapid, and the temperature in the stomach 95°. Shortly afterwards the temperature was 90°. The minute circulation was pretty good, and pulsatory in the arteries, the heart beating from twenty-eight to thirty-six times in the minute.

In another bat, in an atmosphere of the temperature of 36°, the thermometer in the stomach rose to 39°. The animal being continually excited, the temperature rose to 65°, but speedily fell to 60°.

The animal excited and revived in this manner is in a state of exhaustion and inanition. It is incapable of maintaining its temperature if exposed to cold, and will die unless it repass into a state of hibernation." 774.

It may, perhaps, admit of question whether it is the high irritability of the heart which kills because of its incompatibility with excited respiration and an arterialized blood. It is not proved that such irritability remains high when the respiration becomes high, nor is it clear why it should kill, if it did so. If a hibernating animal is stimulated to activity in a low temperature, it is reasonable to suppose that it would suffer, because it is unnaturally excited to exertions disproportionate to the hibernating state which such temperature tends to produce. If, on the other hand, the animal is stimulated in a higher temperature, it is not satisfactorily shewn that the excitation proves fatal, independently of the want of food, or an excessive quantum of excitation itself We offer these not as objections but inquiries, and shall be glad to receive information from our able author. It is only fair to add a question of his own. The fact, he says, of the fatal influence of excited respiration during the augmented irritability of hibernation, contrasted with the similar fatal effect of suspended respiration, during the diminished irritability of the state of activity, will illustrate many of the causes, kinds, and phenomena of death. Do not these resolve themselves, in fact, into irritability insufficiently or excessively excited?

4. *Of Torpor from Cold.* —As Dr. Hall observes, it is important to distinguish that kind of torpor which may be produced by cold in any animal, from true hibernation, which is a property peculiar to a few species. The former is attended by a benumbed state of the sentient nerves, and a stiffened condition of the muscles; it is the direct and immediate effect of cold, and even in the hibernating animal is of an injurious and fatal tendency; in the latter, the sensibility and motility are unimpaired, the phenomena are produced through the medium of sleep; and the effect and object are the preservation of life.

True hibernation is induced by temperatures only moderately low. All hibernating animals avoid exposure to extreme cold. They seek some secure retreat, make themselves nests or burrows, or congregate in clusters, and, if the season prove unusually severe, or if their retreat be not well chosen and they be exposed in consequence to excessive cold, many become benumbed, stiffened, and die.

Dr. Hall continues:—

"To induce true hibernation, it is quite necessary to avoid extreme cold; otherwise we produce the benumbed and stiffened condition to which the term torpor or torpidity may be applied. I have even observed that methods which secure moderation in temperature, lead to hibernation; hedgehogs, supplied with hay or straw, and dormice, supplied with cotton-wool, make themselves nests and become lethargic; when others, to which these materials are denied, and which are consequently more exposed to the cold, remain in a state of activity. In these cases, warmth or moderated cold actually concur to produce hibernation.

When we read of insensibility, of a stiffened state of the muscles, and of a

cessation of the circulation, as obtaining in hibernation, we may be certain that a state of torpor has been mistaken for that condition. The actually hibernating animal exposed to continued severe cold is, as M. Saissy correctly observes, first roused from this state of ease and preservation into a painful activity, and then plunged into a fatal torpor." 775.

He adds :—

"In conclusion, one of the most general effects of sleep is to impair the respiration, and with that function the evolution of animal temperature. The impaired state of the respiration induces a less arterial condition of the blood, which then becomes unfit for stimulating the heart; accumulation of the blood takes place in the pulmonary veins and left auricle; a sense of oppression is induced, and the animal is either roused to draw a deep sigh or awakes altogether.

Such are the phenomena in animals in which the heart has not the faculty of taking on an augmented state of irritability, with this lessened degree of stimulus. But in those animals which do possess this faculty, a property which constitutes the power of hibernation, the heart continues the circulation of the blood, more slowly indeed, but not less perfectly, although its arterial character be diminished, and its stimulant property impaired. No repletion of the pulmonary veins and of the left auricle, no sense of oppression is induced, and the animal is not roused; the respiration continues low, the temperature falls, and the animal can bear, for a short period, the abstraction of atmospheric air.

All the phenomena of hibernation originate, then, in the susceptibility of augmented irritability. The state of sleep, which may be viewed as the first stage of hibernation, induces an impaired degree of respiration. This would soon be attended with pain, if the irritability of the heart were not at the same time augmented, so as to carry on the circulation of a less arterial blood, and the animal would draw a deep sigh—would augment its respiration or awake. Occasional sighs are, indeed, observed in the sleep of all animals, except the hibernating. In these, the circulation goes on uninterruptedly, with a diminished respiration, by the means of an augmented irritability. There is no stagnation of the blood at the heart; consequently, no uneasiness; and the animal becomes more and more lethargic, as the circulation of a venous blood is more complete. This lethargy is eventually interrupted by circumstances which break ordinary sleep, as external stimuli or the calls of appetite." 776.

Our author enumerates the hibernating animals. The most unequivocal are the bat, the hedgehog, the marmot, the hamster, the dormouse. It has been said that the bear and beaver belong to the number, but this is extremely doubtful. It has been said also that the swallow belongs to the hibernating class, but this is incorrect. The cold-blooded animals, the Chelonian, the Saurian, the Ophidian, and the Batrachian tribes, all, however, indubitably pass the winter in a state of apathy and lethargy. Some of the fishes also become lethargic during the cold season. The same remark applies to some of the molluscous and insect tribes.

We cannot but think Dr. Hall's paper highly interesting. It displays his aptitude for clear and discriminating generalizations, and for resolving into simple formulæ many and apparently contradictory facts.

II.—On Animal Heat.

The fifteenth and sixteenth Parts of the Cyclopædia contain an article on this subject by Dr. W. F. Edwards. Some observations on it will also be

found in Müller's Physiology, now in process of translation by Baly; and we propose to abstract from both, but more particularly from the first, a consistent account of what is at present known on this most important physiological problem. A correct acquaintance with the laws of animal heat will tend materially to improve our practice, and by opening to us philosophical and extended views of the economy, will especially enable us to appreciate more satisfactorily those influences of climate and of season, which affect so vitally the human race. We would direct the attention of our readers to the inquiry, which has a very direct and essential bearing on the maintenance of health and the treatment of disease.

Dr. Edwards commences by remarking, that it was the natural but erroous supposition, before the application of the thermometer, that the temperature of our bodies is continually varying. The thermometer corrected that mistake but bred another—that our temperature does not vary at all.—Still, he says, the measures of temperature given by different observers did not perfectly accord, though each presented his conclusions as the temperature of the race. It was but reasonable to imagine that these discrepancies arose not from any want of accuracy in observation, but from diversities inherent in the subjects observed. This is now known to be the case. But though proofs of this truth have been greatly multiplied, the whole subject has never been presented in a connected and systematic manner.

Since it is proved that the temperature of the human body varies, we can only obtain an approximation to its actual amount by taking the mean of all the good observations that have ever been made, being particularly careful to include the extremes; for a mean gives but a very imperfect idea of a term that ought to represent a variable number, if the limits are not at the same time assigned and taken into the account. The best observations of this kind, provided they be sufficiently numerous, will be those that have been made by the same individual, inasmuch as there is great likelihood that he will always have made use of the same procedure and of the same instruments, by which the results become more readily comparable one with another.

Temperature of the Human Body.—Dr. Edwards employs the measures of temperature given by Dr. John Davy. They amount to one huudred and fourteen in number, and were made on individuals of both sexes and of different ages in three quarters of the world, in Europe, Asia and Africa, in different latitudes, under various temperatures, and among individuals of differerent races.

The mean age of the subjects of Dr. Davy's observations was twenty-seven years. The mean temperature of the air was 23°, 3 c. (74° F.*) between the limits of 15°, 5 (60° F.) and 27°, 8 (82° F.). In these circumstances the mean temperature of the body, which was always taken in the mouth, was 37°, 7 (100° F.) between the extremes 35°, 8 (96°, 5 F.) and 38°, 9 (102° F.). The greatest difference in one hundred and fourteen ob-

* "[The valuations according to Fahrenheit's scale the editor desires may be regarded as mere though close approximations to the indications according to the centigrade scale.]—ED."

servations, therefore scarcely exceeds three degrees. The temperature of the human body thus obtained might be considered as exact if the conditions of age and external atmospheric temperature approached pretty closely to their respective means. This, in fact, was the case as regards the first term, but not as concerns the second; for some of the observations were made under very intense degrees of heat, such as 27°, 8 (82° F.), but none at the opposite extreme, or at a temperature which could be reputed cold, a temperature of 15° (59° F.) being already sufficiently agreeable. So that if the temperature or the air influences that of the body, the mean which has been stated as the temperature of the species would be too high.

It is, of course, requisite, in order to enlarge our notions and exclude sources of fallacy, to examine the temperature of other animals, as well as that of man.

Temperature of the Mammalia.—The observations here (we quote and shall quote Dr. Edwards) were made on thirty-one different species taken from among the principal divisions of this class, and under a mean temperature of the external air equal to 25° (77° F.), between the limits of 15° (59° F.) and 30° (86° F.).

The mean temperature of the body of the Mammalia was 38°, 4 (101°, 10 F.), the maximum being 40°, 5 (105° F.), the minimum 37°, 2 (99° F.). The extent of variation consequently presented by the Mammalia, 3°, 3 of the centigrade scale (6° F.), is nearly equal to that exhibited by man. But there is this difference between the two scales, that the extremes and the mean in the case of man are inferior to the corresponding terms in the case of the Mammalia.

Temperature of Birds.—The observations here were made on fifteen species in different orders. The mean temperature of the air was 26°, 1 (79° F.), between the extremes 15° (59° F.) and 31°, 5 (88°, 75 F.). The temperature of the subjects of the experiments offered a mean of 42°, 1 (170°, 86 F.), the superior limit being 43°, 9 (111° F.), the inferior 37°, 2 (99° F.).—The temperature of birds, therefore, presents a scale much more extensive than that of man and the Mammalia, amounting to as many as 6°, 7 degrees centigrade (12° F.). It also stands above both of the others in the point of its mean, which is higher by 3°, 7 (6° F. nearly) in its upper limit, and 5° centigrade (about 9° F) higher in its lower limit. The lower limit, in fact, corresponds very nearly with the mean term of the heat of the Mammalia as exhibited in the preceding scale. Much cannot, however, be said on the minimum of heat in these instances, no observation having been taken at a temperature lower than 59° F.

Temperature of Reptiles.—From nine observations made on members of the four orders of Reptiles, Dr. Davy found, the external air having a mean temperature of 26°, 5 (79°, 75 F.) between the extremes 32° and 16° (89°, 5 and 60°, 75 F.), that the temperature of Reptiles was not higher than 28° (82°, 5 F.).

Temperature of Fishes.—If from Reptiles we pass to Fishes, corresponding and even more remarkable differences are perceived. Dr. Davy, indeed,

gives the temperature of no more than five species, but they belonged to very different orders. The mean external temperature being 22°, 3 (72° F.), that of fishes was found to be but 23°, 2 (74° F) which is very little more than one degree centigrade higher. This difference becomes even more striking, if possible, as we descend in the scale of animals.

Temperature of Insects.—From eight observations on insects of very dissimilar species, the mean temperature of the air being 24° (75°, 5 F.), that of the insects was 24°, 2 (75°, 75 F.)

Temperature of the Crustacea.—Two species of Crustaceans, the crayfish and crab, presented a still more interesting phenomenon. The mean temperature of the air was 24°, 4 (76° F.) at the time of experimenting, that of the Crustacea 24°, 1, or somewhat lower than the ambient medium. This we do not presume to present as the rule, but we would say that the temperature of the Crustacea is nearly equal to that of the medium in which they are plunged.

Temperature of the Mollusca.—In observing the temperature of a single Mollusc, the common oyster, the temperature of the sea being 27°, 8 (82° F.) that of the animal was 27°, 8 also.

It is obvious that, in regard to temperature, animals, from reptiles inclusively downwards, may be arranged in a single group and termed *cold-blooded;* while mammalia and birds will constitute a higher class, the *warm-blooded.*

To characterise the temperature of the latter great division, the mean of the temperatures of the respective classes which compose it must be taken first. From the experiments of Dr. Davy the mean temperature of mammalia appears to be . . . . . 38°, 4 (101° F.)
that of birds . . . . . 42°, 1 (108° F.)

Mean of both classes . . 40°, 25 (104°, 5 F.)

We may therefore say that the mean temperature of warm-blooded animals, including man, surrounded by a moderate external temperature, is in round numbers 40° (104° F.) between the limits of 36° and 44° (97° and 111°, 5 F.), by which we have a scale of difference amounting to 8° (about 14° F.).

The other class, that, namely, including the *cold-blooded animals*, having no peculiar temperature proper to them, may be characterized in the following manner:—their temperature differs little or not at all from that of the surrounding media in which they live, when this is at a degree which may be called moderate.

General Conditions of Organization relatively to the Production of Heat.—So marked a difference existing in the temperature of the two divisions of animals, it is a natural presumption that some grand differences exist also in their structure. And such is found to be the fact. It is a natural presumption too, that if such differences of structure and of temperature coincide, they have the mutual relations of cause and of effect. To determine whether this presumption is correct it is necessary to pursue the train of

investigation which is found to succeed to in the great divisions of natural science—to exclude certain phenomena from the mass to be examined and watch the effects of such exclusion—to insulate, in fact, particular phenomena and observe their actions and their habitudes when uncombined and unimpeded with those of others. Nature helps us by the diversity of the forms of animal life which she disports in, and we must help ourselves where she does not go quite far enough, by special experiments of our own.

Let us apply then this philosophical method to the case before us. We have said that the warm and the cold-blooded animals, differing as they do, differ also in structure;—what *are* those latter differences?

1. Mammalia and birds have the double circulation, which the cold-blooded have not.

2. The character which distinguishes the respiratory organ of warm-blooded animals from that of cold, is this,—that either in itself or its appendices (the air-sacs of birds) it presents a much larger extent of surface in relation with the air.

3. Warm-blooded animals are farther distinguished from the cold-blooded by important modifications of the digestive canal. 1. The first portion of the apparatus from the mouth to the stomach is much more complex in them; for instance, it presents either a much more perfectly developed dental system, fitted to divide the food, or a sac, as among birds, fitted to macerate the aliment, and cause it to undergo a kind of preparatory digestion before it is passed to the stomach. 2. The stomach is more distinct; either the entrance to and exit from this pouch are better marked, being often provided with a valve, as in the mammalia, or its structure and form are more special, as we observe it among birds. 3. The intestinal canal is much longer in the warm than in the cold-blooded tribes.

4. The nervous system presents diversities still more important and well marked. The most striking character exists in the proportion of the principal trunk of this system, and especially of its encephalic extremity, which is much larger in the warm than in the cold-blooded animals.

These organic conditions, which are mutually dependent, may be reduced to the expression of these two general ones:—1st, the formation and distribution of the arterial blood, the particularly exciting and nutritive blood of the body; 2d, the most powerful influence of the nervous system.

As these are almost the sole points of any consequence that distinguish the structure of warm and of cold-blooded animals, it follows, that, within the circle which they form, the causes of difference of temperature must lie.

"Conditions of organization and of functions may be entitled the physiological causes of the production of animal heat. If we succeed in determining these we ought to rest satisfied. If, indeed, to this knowledge we could add that of the immediate cause of this phenomenon among animals, or what is the physical cause, it would be a great gain for science. This, accordingly, was the object of the labours of the majority of physiologists who have given their attention to the subject of animal heat. But they could not possibly succeed in their researches, for the simple reason that natural philosophers themselves have not yet discovered how heat is produced in the inorganic world; although indeed they have presumed that they were acquainted with it." 651.

The immediate cause of animal heat is a problem not likely to be solved. But we may connect it with some particular function or functions, and having

done so much we shall do well. We must proceed in the manner we have already mentioned, varying the conditions under which heat is produced, either by our own experiments, or by availing ourselves of the innumerable experiments ready made for us by nature.

Mammalia and birds have been shewn to have a higher temperature than reptiles and fishes, and the conditions which distinguish the two classes have been stated generally. The next thing is to compare the orders with each other, and observe the distinctive characters of each. Compare then mammalia and birds.

The lungs of birds, writes Dr. Edwards, although smaller, are more loaded with blood than those of the Mammalia, and are in communication with extensive air-cells, spreading all through the body and even penetrating into the cavities of the bones, so that the air may be said to penetrate the body generally, and to be in contact with the ramifications of the aorta as well as with those of the pulmonary artery; the blood of these animals is therefore in the most extensive relation imaginable with the air of the atmosphere. Again, if the nature of the blood of Birds be considered, independently of this extensive relation with the air, the organic condition here will not appear less favourable to them. The globules of this fluid, indeed, are a little larger and less spherical than in Mammalia, which is a disadvantage; but the proportion they bear to the fluid part is so favourable to birds that this circumstance must give them immensely the advantage in reference to the character which engages us. With regard to the nervous system, if the encephalic extremity is developed in a minor degree in birds, their circulating and respiratory systems act with greater quickness. Lastly, and as an effect of the whole of these conditions, the consumption of air is much greater among birds than among Mammalia.

The respiratory system then, is more developed in birds than in mammalia—the nervous less. The mean temperature of the mammalia is 38°, 4 (101° F.), that of birds 42° 1 (108° F.)

Compare next reptiles with fishes.

The digestive apparatus is more complete among reptiles than among fishes; 1st, in the dental apparatus when it exists; 2d, in the more distinct stomach; 3rd, in the greater length of the intestines.

The blood of reptiles is superior to that of fishes both as regards the nature of the globules and their relative proportion, their size being smaller and their numbers greater, than among fishes.

If the whole of the blood in the reptile is not transmitted through the organ of respiration, whilst in the fish it is, a larger quantity of this fluid is brought into contact with the air in the same space of time in consequence of the greater extent of surface of the organ in the reptile, and then the reptile has the farther immense advantage of a pulmonary or aerial respiration, whilst that of the fish is branchial or aquatic. To conclude, the nervous system of reptiles is much more developed in the cerebro-spinal axis, and especially in the encephalic extremity, than in fishes.

Perhaps the most striking difference between reptiles and fishes is the fact, that the first respire in air, the latter in water. The development of heat is greater in reptiles than in fishes.

To pursue the inquiry, is to compare the cold-blooded vertebrata with the invertebrata.

"A glance suffices to shew the vast inferiority of the invertebrata in this as in every other respect. In the first place their blood is so little of the same nature as that which has been recognised most favourable to the production of heat, that it wants the characters whether of arterial or of venous blood. The blood of the invertebrata, with the exception of a very small group (the worms with red blood), is colourless. In the structure and number of its globules it is also greatly inferior. The globules, indeed, may be smaller, but then they are of a much more simple structure, and consequently lower in the scale, in other words, more imperfect. In the relation to the fluid part of the blood too, they are in much smaller proportion than among the vertebrata. An analogous character is manifest in the tissues generally, the proportion of water in them being incomparably larger in the invertebrate than in the vertebrate series of animals. Finally, there is an immeasurable inferiority in the nervous systems of the invertebrate compared with even the lowest of the vertebrate series of animals." 653.

The invertebrata have a much smaller capability of producing caloric than the cold-blooded vertebrata.

"The comparison might be carried out in regard to insects and the mollusca, which present some appreciable differences. If attention were confined solely to the structure of the greater number of the organs of nutrition, which are much more largely developed in molluscs, it might be inferred that they had a higher caloric power than insects; but when we take into the account, 1st, the final result of the nutritive functions, the quality of the tissues, which in the mollusc are much more loaded with watery fluid, by which they acquire a greater degree of softness and flaccidity, (whence the class has its name), whilst in the insect they are, on the contrary, as remakably dry and firm;—2d, when the most general mode of respiration is compared in the two divisions, it being in the insect aerial, in the mollusc aquatic; 3d and lastly, when we glance on the one hand and on the other at the state of the nervous system, and observe how much less perfectly this is developed in most of the molluscs than in the insect, it is impossible not to perceive that according to the principles influencing the production of heat, the mollusca must be inferior in this respect to insects. This is indeed the result of observations of all kinds, however imperfect or limited these may have been." 654.

It is impossible, for very intelligible reasons, to carry the investigation and comparison lower down in the scale. The phenomena connected with heat in the lower grades of the animal creation become inappreciable; and this even in virtue of the same principle that has been announced; for the tissues are found to become more and more watery as we descend in the scale, till at length the solid constituent is almost inappreciable. Of course the circulating fluid must be watery in a still greater ratio; it contains but few globules; and then the nervous system falls off in a still greater proportion; it becomes more and more imperfect, till at length no trace of it is to be discovered.

The general temperature of animals has been examined. The next point is to ascertain the

Temperature of different Parts of the Body.—Our own feelings tell us that different parts of the body have different temperatures. A law of decrease of temperature in the ratio of the distance of parts from the heart had even been deduced from observations of that kind. But when exact measurements came to be taken this law was soon found to be a fault. Dr. Davy, in taking

the temperature of the different parts of the body of a lamb, found that of the right ventricle of the heart 40°, 5 (105° F.), that of the left ventricle 41°, 1 (106° F.) The left ventricle was therefore higher in temperature than the right, to the extent of a degree of the scale of Fahrenheit's thermometer. The temperature of the rectum corresponded with that of the right ventricle.

In my enquiries, says Dr. Edwards, along with M. Gentil into the relations in point of temperature of certain external parts, we found in a strong man, perfectly at rest in mind and body, in the month of July, the external air being at 21°, 25 c. (71° F.), the temperature of the month 38°, 75 (102° F.) ; that of the rectum corresponded. The hands presented the next highest degree, marking nearly 37°, 5 (99° 5 F.) What is remarkable is that the axillæ and groins, which corresponded with one another, were very sensibly lower in temperature than the hands ; they did not raise the thermometer higher than 36°, 96 c. (99° F.) The cheeks marked 35°, 93 (96°, 5 F.), the temperature being ascertained by enveloping the bulb of the thermometer in the skin of these parts. The feet were a little lower, 35° 62 (about 96° F.) ; their temperature being determined by placing the thermometer between the two, so that the bulb was surrounded on every side.— The temperature of the feet was, therefore, notably lower than that of the hands, differing to the extent of 1°, 88 of the centigrade scale (above 3° of Fahrenheit's thermometer). Placed on the skin between the thorax and abdomen the thermometer was at its minimum, not rising higher there than 35° (95° F.) ; but here a part of the bulb being in contact with the air, there must have been considerable cooling.

Internal parts seem to have some such relations of temperature with each other as the following :

1st. The warmest part of the body, according to John Hunter, is in the abdomen, close to the diaphragm. 2d. The next part in point of temperature is the left ventricle of the heart. 3d The right ventricle of the heart is the next in succession. The rectum and the mouth shut are of the same temperature. The greatest difference consequently between the temperature of these internal parts does not amount to more than 1° centigrade, or at the utmost 2° Fahrenheit.

Supposing the relations in temperature of the internal parts to be pretty constant in the normal state, the temperature of the right ventricle of the heart and of the rectum may be determined by taking the temperature of the closed mouth ; that of the left ventricle will be found by adding 0,44 c., or 1° F. to the degree indicated.

Relations in point of temperature between external parts.—We have only data for instituting comparisons in regard to the hand, the axilla, the groin, and the feet, among the external parts of the body. In a moderate summer-heat the hand appears to be the part which is most susceptible of showing a high, the feet the parts most susceptible for exhibiting a low temperature.— The axilla and groin generally exhibit nearly the same degree of temperature ; and the amount in which they differ in this particular from the mouth may be stated at about 1°, 75.

But the thermometer is, for obvious reasons a coarse and an imperfect instrument for ascertaining the temperature of the deeper parts. These considerations, says our author, led to the adoption of thermo-electrical means

by Messrs. Becquerel and Breschet. The processes they employed in procuring indications of temperature were the following. The only means we have of penetrating into the interior of organs without injury is to make use of a needle similar to that employed in acupuncture. Now it is easy to arrange this needle so as to obtain thermo-electric indications, which proclaim immediately and with the greatest precision the temperature of the part or medium with which the point happens to be in contact. It is enough to compose this needle of two others in metal, two of the extremities of which are soldered together in a few points only, whilst the other two are placed in communication with one of the extremities of the wire of an excellent thermo-electric multiplier. The slightest changes of temperature at the points of junction give origin to an electrical current, which, in reacting on the magnetic needle, causes it to deviate by a certain number of degrees, which consequently become indices of the temperature of the point of the needle, and therefore of the medium in which it is placed. The multiplier ought to be so sensitive as to show a deviation of one degree of the magnetic needle for each one-tenth of a degree of temperature as measured by the centigrade scale, an amount of temperature made sensible by the union of the two ends of the wire which forms its circuit with an iron wire soldered by its ends.

Dr. Edwards relates a series of experiments too circumstantial for our purpose. The main fact is that muscular contraction developes heat in the muscle and its vicinity, chiefly, no doubt, from the afflux of blood to them.—Dr. Edwards remarks :—

"In the rise of temperature observed along with muscular contraction, we have in the first place only considered the action of the blood ; but neither contraction of the muscles nor the afflux of a larger quantity of blood could take place without the nervous influence ; for it is the will which determines the muscular contraction, and the will only acts through the medium of the nerves which are distributed to the muscles. From this consideration it follows equally as from general relations previously exposed, that whatever lessens the nervous influence will likewise tend to reduce the temperature. Here we are, then, reverting to the two general conditions which we had already found to be the most influential in calorification, namely, the arterial blood and the nervous system." 658.

Influence of External Temperature.—The source of heat being in animals in the centre, it is reasonable to suppose that the surface would be influenced by the lower temperature of the surrounding medium, and be rather cooler in consequence. And such is found to be the case. If the external temperature should vary, it is also natural to suppose that the temperature of the surface of the animal would vary too. This is found to be the case also, but not to any considerable amount. Dr. Davy made the following series of observations :—

Temperature of the air.	*Mean temperature of five men.*
15°, 5 (60° F.)	36°, 85 (98° F.)
25°, 5 (78° F)	37°, 16 (99° F.)
26°, 4 (79° F.)	37°, 32 (99° 5, F.)
26°, 7 (80° F.)	37°, 58 (100° F.)
27°, 8 (82° F.)	37°, 70 (100° 5, F.)

The changes in the temperature of the body in these cases must be admitted to be slight, for whilst the temperature of the air varied to the ex-

tent of 12°, 3 c., the changes in the mean temperature of the body did not exceed 0°, 9. The results, however, are confirmed by the observations of Dr. Reynaud, surgeon of the corvette La Chevrette, in a voyage of discovery in the Asiatic seas, undertaken in the year 1827.

Mean temperature of the body deduced from observations four times repeated upon each of eight men, under the torrid zone, the external temperature varying from 26° to 30° c. (79°, 86° F.) } 37°, 58 (100° F.)

Mean temperature of the same eight men observed three times in the temperate zone, the external temperature varying from 12° to 17° (53° to 62° F.) } 37°, 11)99° F.)

It is to be regretted that these experiments have not been carried into low temperatures. But in the voyage of Capt. Barry it was observed that the temperature of the mammalia was very high. With the external thermometer at — 29°, 4 (— 21°, F.), the temperature of the white hare was + 38°, 3 (101° F.) With the thermometer at — 32°, 8 (27° F.) the temperature of a wolf was + 40°, 5 (105° F.): the temperature of the Arctic fox, under nearly the same circumstances, namely when the thermometer was standing at — 35° (— 31° F.), was as nigh as + 41° 5 (107° F.). Similar observations have since been made in the same high latitudes upon man.

Dr. Edwards has studied and experimented on the influence of seasons on the temperature of warm-blooded animals. The observations made on sparrows exhibited the greatest differences. In the month of February the mean temperature of these birds was found to be 40°, 8 (105° F.); in April 42° (108° F.), in July 43°, 77, (111° F.) The temperature from this time began to decline, and followed in the same ratio in which it had increased, the sinking temperature of the year.

It is shewn to be the fact, what our sensations would indeed make us believe to be so, that water both cools and heats far more than air. And, from immersions of parts of the body only in water, the following deductions may be drawn:—1st, that partial chills, or the exposure of individual parts of low temperatures, may be and are felt very extensively even when the cold is not very severe; 2nd, that the chilling of a single part, such as the hand or the foot, may cause a loss of temperature in all the other parts of the body, even far beyond what could have been presumed as likely or possible. These facts give a key to the right understanding of the immense influence, which partial chills are capable of exercising on the state of the general health.

The Effects of partial Heating are not altogether unimportant. The hand being immersed in water heated to the temperature of 34° R. (109° F.), rose one degree of the same scale, and the temperature of other remote parts not immediately exposed to the influence of heat were found to have risen in a corresponding degree. Whence follows this axiom,—*that we cannot either raise or lower the temperature of any one part of the body without all the other parts of the frame being affected, and suffering a corresponding rise or fall in temperature, more or less according to circumstances.*

Effects of a very high or a very low external Temperature on the Tempera-

ture of the Body.—On a summer's day, the temperature of the air being 37°, 77 c. (100° F.), Franklin observed that the temperature of his own body was nearly 35°, 55 c. (96° F.) This fact proves, of itself, that man has the power of keeping his temperature inferior to that of the air. In numerous experiments made in England by Dr. Fordyce and his friends, and subsequently by Dr. Dobson, in which these experimenters exposed themselves to very high temperatures, which on some occasions exceeded that of boiling water, the heat of the body was never observed to rise more than one, two, three, or four degrees of Fahrenheit's scale at the utmost. The highest temperature of the body noticed by Dr. Dobson is 102°.

"The highest temperatures of the human body exposed to excessive heats ever observed, were remarked by Messrs. Delaroche and Berger in their own persons. The temperature of M. Delaroche being 56° 56 c. (98° F.) increased 5° of the centigrade scale, by remaining exposed in a chamber the temperature of which was 80° c. (176° F.). M. Berger, whose temperature was the same as that of M. Delaroche, gained 4° c. by remaining for sixteen minutes in the hot chamber at 87° c. (188°, 5 F.). These experiments are liable to this objection, that the temperature was taken in the mouth in an atmosphere of much higher temperature, which might have some influence in raising the thermometer. To arrive at conclusions against which no kind of objection could be raised, Messrs. Delaroche and Berger exposed themselves in succession in a box, out of which they could pass their head; the hot air or vapour of the interior being prevented from escaping by means of a circular pad of soft napkins placed between the edge of the outlet and the neck. The temperature of the mouth, in this way, if it was increased, must be increased in consequence of a rise of temperature in the parts of the body included in the bath. After a stay of seventeen minutes in the bath, heated from 37°, 5 to 48°, 75° c. (99° to 120° F.), the temperature of M. Delaroche's mouth rose 3, 12 c. Under similar circumstances, the temperature of the bath being from 40° to 41°, 25 c. (104° to 106° F.), the temperature of M. Berger's mouth increased 1°, 7 c. in the course of fifteen minutes.

It is pretty obvious that experiments upon the human subject cannot be pushed far enough to ascertain the highest amount of temperature that can be acquired under the influence of exposure to air of excessively high temperature To judge of this analogically, recourse must be had to warm-blooded animals of the two classes, mammalia and birds. Messrs. Delaroche and Berger consequently exposed different species of mammalia and birds to dry hot air of different temperatures, from 50°, to 93°, 75 c. (122° to 201° F.), leaving them immersed till they died. The whole of the animals that were made subjects of experiment, in spite of diversity of class and species, and the varieties of temperature to which they were exposed, had gained an increase of temperature nearly equal at the moment of their death. The limits of the variations being between the terms 6°, 25 and 7°, 18 c., the amount of difference did not exceed 0°, 93 c. which is a very trifling quantity. It may therefore be inferred, that man and the warm-blooded animals cannot, under the influence of exposure to dry air of excessively high temperature, have the heat of their body raised during life to a greater extent than from 7° to 8° c. The temperature of the body being increased to this extent becomes fatal. It is in fact only attained at the moment of dissolution; perhaps death has virtually taken place before it is attained." 661.

The cold-blooded animals exhibit during the heats of Summer a temperature inferior to that of the air. Thus the temperature of the atmosphere being 32° c, (90° F.), that of a tortoise was only 29°, 4 (85° F.). And many such experiments might be reported.

It is scarcely necessary to observe that evaporation is a cooling process to animals, and that it acts in a very efficient manner. We pass to the—

Relations of the Bulk of the Body to Animal Heat.—"If the temperature of the larger animals be compared with that of the smaller, it will be found that the former do not mark so high a degree as the latter. In the elephant and horse for instance, no higher a temperature than 37 , 5 c. (100° F.) has been observed, whilst in the rat and squirrel temperatures of 38°, 8, and of 39°, 4 (102° and 103° F.) have been noted. To prove that the difference is less owing to the order or species than to the simple size, we shall contrast several animals belonging to the same order, selecting the ruminants. The temperature of the air being the same, namely, 26° c. (79° F.), the temperature of the ox was found to be 38°, 9 (102° F.), whilst that of a castrated he-goat was 39° 5 (103° F.), and that of the she-goat and sheep 40° (104° F.)." 662.

Smallness of size must, per se, tend to lower temperature from the comparatively great amount of surface exposed to the inferior temperature of the air. But, on the other hand, the circulatory and respiratory motions are more rapid in animals of small than of greater bulk, and that is a circumstance favourable to the production of heat.

Relations of Age to Animal Heat.—It is certainly of consequence to ascertain these. Dr. Edwards has made some experiments which throw much light upon them.

"If," he says, "the temperature of new-born puppies lying beside their mother be taken, it will be found from one to three degrees inferior to that of the parent. The same thing obtains in regard to the young of the rat, the rabbit, the guinea-pig, &c. and is probably universal among the mammalia. Among birds the same circumstance presents itself in a still more marked degree. If they be taken out of the nest in the first week or even fortnight of their existence, the difference of temperature extends to from 2° to 5° c. between the young and the parents. The fact has been ascertained in regard to the sparrow, the swallow, the martin, the sparrow-hawk, the magpie, the thrush, the starling, &c. &c., and is probably, as among mammalia, universal. Whence we may conclude that the phenomenon is general as regards warm-blooded animals. We might have taken it for granted that man was comprised within the category, but it is just as well to have the assurance that he forms no exception to the law, that he has no peculiar privilege in this respect. To have a precise term of comparison, the temperature of twenty adults was taken at the same time, the thermometer being applied in the axilla. The temperature of these twenty persons varied between 35°, 5 and 37° c. (96° and 99° F.); the mean term was therefore 36°, 12 (97° F.). The temperature of ten infants varying from a few hours to two days in age, ascertained in the same manner, varied between 34° and 35° 5 c. (93°, 5 and 96° F.). The mean was therefore 34°, 75 c. (about 94°, 5 F.). There was consequently a difference of nearly two degrees between the temperature of the adult and of the newly-born babes. Man is therefore proved to be subjected to the same law here as animals having warm blood in general, the young of which, so far as they have been examined, and we may presume universally, are inferior in temperature to their parents." 663.

But if the manner of experimenting is altered, results of an extraordinary character come out. To develope these the temperature of the newly born being must not be taken only when it is in contact with its mother. If, after having ascertained the temperature of a puppy in this position, it be re-

moved from the mother and kept isolated, the temperature will be found to fall rapidly; and this phenomenon takes place not only when the air is cold, but when it is mild. The phenomenon does not commence after a term; it is apparent from the moment the separation takes place, and is very sensible after the lapse of a few minutes. The following is the rate of cooling of a puppy twenty-four hours old, the external temperature being 13°, c. (about 55° 5 F.), taken at intervals of ten minutes; the series of course represents the successive losses of temperature in the course of the small intervals of time indicated:—temperature in commencing the observations 36°, 87 c.; the declensions in temperature at intervals of ten minutes successively, 0°, 63, 1°, 12, 1°, 38, 1°, 25, 1°, 29, 0°, 87, 1°, 63, 0°, 25, 1°, 0; in thirty-five minutes the temperature declined farther 1°, 25; in thirty-five minutes more it fell 3°, 12; in thirty minutes more 2°, 50; in twenty-five minutes more 1°, 25; in thirty minutes more 1°, 25; so that in the course of four hours in all, the temperature declined by the amount of 18°, 12 of the centigrade scale (about 33° F.)! Not only had the temperature of the animal sunk by so large a quantity in so short a period of time, the external temperature being pleasant, but it actually could maintain its temperature at no higher a grade than 6°, 75 c. (14°, 5 F.) above that of the atmosphere. Experiments of the same kind performed on three other puppies of the same litter presented results in all respects analogous. The cooling may even go much further by protracting the period during which the young animals are kept apart from their parent. For instance, four puppies, twenty-four hours old and of much smaller size than the subjects of the former experiments, after having sunk 16° c. in four hours and thirty minutes, lost six degrees more of temperature in the succeeding eight hours and thirty minutes, the air remaining all the while at 13° c. (55°. 5 F.) They consequently lost twenty-two degrees centigrade in thirteen hours; and, what is very remarkable, their final temperature was but one degree above that of the surrounding air. Kittens and rabbits of the same age exhibited similar phenomena, if possible in a more striking degree. Some kittens were observed to cool twenty degrees centigrade within the short interval of three hours and a half, and some young rabbits suffered the same depression of temperature in two hours and ten minutes, the air being at the time at 14° c. (57°, 5 F.).

This does not, however, hold with all animals, and Dr. Edwards gives us a formula for those with whom it does and does not obtain.

Those species of mammalia which in the earlier period of their existence do not maintain their temperature, that of the external atmosphere being mild or warm, but cool down to the standard of the cold-blooded animals, are born with their eyes closed; whilst those which maintain their temperature, that of the external atmosphere being mild, are born with their eyes open; and this, whether they can walk about like the guinea-pig, the kid, &c. or cannot do so, as is the case with the human infant in particular.

Dr. Edwards observes, that, in puppies, at the period of their birth, the ductus arteriosus continues pervious and of large size. The consequence of this structure is that a free communication is established between the arterial and venous blood, by which they are mingled in large proportion one with another. And here we have precisely the physiological character derived from the nature or quality of the blood which distinguishes the cold-blooded from the warm-blooded vertebrata in the adult age. The same circumstance

obtains with the other species of mammalia which lose their temperature and fall to the standard of the cold-blooded tribes. But in those (take as an instance the guinea-pig) which from the first day of its extra-uterine existence maintains its temperature nearly on a level with that of its parent when the air is temperate, the ductus arteriosus is closed immediately after birth.

This relation, continues our author, is preserved in the young mammalia in every modification in a peculiarly interesting manner. The young mammalia which are born with the eyes closed, at first present the phenomena of refrigeration nearly in the same degree during the two or three first days of their life; though they afterwards exhibit differences of great extent in this respect. Thus a young rabbit two days old had cooled down to 14° from 23° c, (to 58° from 74° F.) in the course of three hours fifty minutes, the air being at the time temperate; another three days old took seven hours twenty-five minutes to cool through a range of 18° c., when the process of refrigeration ceased. A third of the age of five days only, lost 5° c. in temperature in the course of one hour fifty-five minutes, and maintained itself afterwards at this temperature. During the following days, smaller and smaller depressions of temperature were observed, till the eleventh day after birth, when the power of sustaining the temperature a little below that of the adult female parent seemed to be acquired permanently. When he modifications of internal structure are examined during this interval of time, we find that the ductus arteriosus has been contracting in the same proportion as the faculty of maintaining the temperature has been increasing, and that it is entirely closed at the epoch when the temperature becomes stationary, the external temperature being understood all the while as mild or pleasant. At the same period precisely too, the eyes are unsealed.

Among the young of birds, there are equally marked differences in the calorific functions. Some lose heat rapidly when separated from the mother; others maintain their temperature to within a little of that of their species. Sparrows, for instance, which have been hatched but a short while, present a temperature from 4° to 5° c. lower than that of their parents when still contained in the nest, where they contribute to each other's warmth. But taken out of the nest and isolated, although the temperature be that of summer, they begin to cool with extreme rapidity. A young sparrow a few days old lost as many as 12° c. in the short space of one hour seven minutes, the air at the time marking 22° c. (72° F.). The same thing happens with swallows, sparrow-hawks, &c. But the law is not universal; it does not hold in reference to all the genera. There are several that have the power of sustaining their temperature in spring and summer at a degree but little below that of their parents. Birds, therefore, form two groups as regards the production of temperature, just as the mammalia do. The first cool down to the standard of cold-blooded animals; the second preserve their warmth when the air is mild or agreeable as it is in the spring and summer. It is interesting to inquire, if there is any external zoological character which marks the power or the incapacity to preserve heat. It is found in the presence or absence of feathers. Dr. Edwards asserts that though the absence of feathers marks and may contribute to the diminished faculty of maintaining a high temperature, it is not its main cause. The internal modification of organization which corresponds with this external sign is

not so palpable as the patency of the ductus arteriosus in the young mammalia. But, in the first place, the nervous system is much less energetic in the unfeathered than in the feathered class; and, in the second place, the digestive powers are in an equal degree inferior in strength; for they are not only unable to take food of themselves from muscular incapacity but also from the lack of the requisite instinct, and, farther, from their digestive organs not being in a condition to elaborate food to any extent. It is on this last account that the parents supply their young with food which has suffered maceration in their own crops, or has even in their stomachs undergone a kind of incipient or partial solution; or otherwise the parents have the instinct to select such articles as are easiest of digestion, and best fitted for the weakly state of the digestive organs of their progeny. We have already observed that a defect in the powers of digestion implies a corresponding imperfection in the blood.

The same principle applies to the first period in the existence of all animals. All have a temperature lower than that of their parents—all display inferiority of energy in their nervous system—all have less vigour of the digestive function and nutrition—all, in short, have the great functions of the body in a state of weakness, and the function of calorification, the result, in a great degree, of all, is weak too.

It follows that, if this be true, the prematurely born should have still less power of maintaining heat than those that are born at the full time. And so it would seem to be. Dr. Edwards made some observations on a case that presented itself to him. A child born at the seventh month, perfectly healthy, and which had come into the world with so little difficulty that the accoucheur could not be fetched in time to receive it, had been well clothed near a good fire when the temperature was taken at the axilla. This was found no higher than 32° c. (under 90° F.). Now we have seen that the mean of the temperature of ten children born at the full time was 34°, 75 c. (94°, 5 F.); the temperature in no case descending lower than 34° (94° F.), and ranging between this and 35°, 5 c. (96° F.)

Dr. Edwards makes some further remarks, the gist of which is that:—'There are four states of the temperature from birth up to adolescence inclusive. In the first period the temperature is at the minimum; in the second, it attains the adult degree: this might be entitled the period of the mean temperature; in the third, the temperature exceeds that of the adult; finally, in the fourth, it sinks to the mean, that is, the temperature of the adult.

Differences of Constitution in relation to the Production of Heat among Animals.—It is obvious that animals may in a certain temperature display nearly the same temperature, or have a particular ratio of heat to each other, and yet when the surrounding temperature is altered, they may no longer exhibit the same, or maintain the ratio they formerly exhibited. And such is found to be the case; indeed the preceding observations are themselves examples of the fact. But the subject is so eminently practical that it deserves to be investigated, at all events in the case of the young and the old. Dr. Edwards remarks:—

A young guinea-pig a month old, the temperature of whose body was high and steady, the temperature of the external air being mild, was exposed along with an adult to the same degree of diminished temperature—

the air was at 0° c. (32° F.). In the course of an hour the young creature had lost 9° c. in temperature, whilst the adult had only lost 2°, 5 c. This experiment, repeated several times with the same species of animal, always gave the same result. Young and adult birds of the same species, treated in a similar manner, showed the same diversity in their powers of resisting the effects of external cold, from which we may infer that the law is quite general. Several young magpies, for instance, whose temperature was stationary in a mild spring atmosphere, were placed with an adult in air cooled to −|− 4° c. After the lapse of twenty minutes, one of the young ones was found to have lost 14° of temperature. The others, examined at intervals, none of which exceeded one hour and ten minutes in length, had cooled from 14° to 16° c. The adult bird, on the contrary, similarly circumstanced, did not suffer a greater depression of temperature than 3° c. The loss of heat sustained by the young birds was so great as to be incompatible with life, if continued; that endured by the old one was trifling in amount and not inconsistent with health.

The difference between the young and the old was too great to be explained by mere difference of size, or quantum of plumage, &c. Dr. Edwards goes on to say:—

A difference of constitution must go for a great deal; there are inherent diversities of constitution, favourable or the reverse, to the production of heat. The truth of this conclusion appears much more clearly if we continue to subject young birds to the same kind of experiment at successive epochs not so close to one another. The rapid progress they make in the power of evolving heat, is, indeed, a very remarkable fact. A few days later, and they lose temperature in a much less considerable degree when exposed to cold under the same circumstances, although there was little or no apparent difference in the external appearance of the birds. And this is a new and convincing proof that the inequality in the disposition to lose heat obvious at different periods of life under exposure to a low external temperature, is principally owing to inherent inequality in the faculty of producing caloric.

These observations and the facts they establish are of the highest moment. They bear on the treatment of the young of our own race. What can be more preposterous than the scanty clothing which modern fashion allows to children? Whilst their mothers are muffled to the eyes in furs, and to the toes in flannels, their unhappy brats are paraded abroad with their legs and bottoms exposed to every blast and their necks left open for the very purpose of inviting scrofula. Yet Nature gives the mother a greater power of resisting cold, than she grants to the child, so barbarously frozen for the sake of vanity and mode.

Influence of Seasons in the production of Animal Heat.—Dr. Edwards remarks that the opinion, that the evaporation from the surface of the body in summer compensates the augmented temperature without, and that the cessation of that evaporation in winter makes up the deficiency of heat externally, must be taken with some reservation. For, he says, in examining those species of cold-blooded animals which from their structure are liable to lose more by evaporation than any other animal, we see that no such compensation takes place. Frogs, for example, the skin of which is so soft

and permeable, and whose bodies besides are so succulent that they must be presumed in the most favourable circumstances to sustain loss by evaporation, ought to preserve the same temperature in winter and in summer if the low temperature in winter were compensated by the excess of evaporation in proportion as the heat of the season augments. But we know that the temperature of these creatures follows to a very great extent, that of the atmosphere, between 0° and 25° c. (32° and 77° F.), differing at no time from it by more than a degree or two. The phenomenon here is simple, by reason of the slight evolution of caloric by the frog, and leaves no doubt upon the mind. We must, therefore, have recourse to other conditions, in order to explain the slight difference that is observed in the summer and winter temperature of man and other warm-blooded animals.

He concludes that the cause is to be found in internal conditions of the body. In winter there is a *more active production* with a *greater loss;* in summer a *less production* with a *smaller loss* of heat. In this way is there compensation, and a perfect equilibrium maintained at all seasons. To render this relation more evident, it may be expressed in another manner; as, for example, in summer the body receives more heat from without, and produces less; in winter it receives less and produces more. It follows, as an obvious deduction that, if the faculty of producing heat is less in summer the temperature of the body will not be maintained to the same point in the two seasons under sudden exposure to the same degree of cold. Dr. Edwards puts this conclusion to the test of experiment.

"The apparatus employed consisted of earthen vessels plunged amidst a quantity of melting ice. Air thus cooled soon reaches the point of extreme humidity. The air being at zero c. (32° F.), the animal is introduced, placed upon a stage of gauze to prevent its coming in contact with the moist and rapidly conducting surface of the vessel. A cover, also piled over with ice, is then placed over the apparatus, but so arranged as still to permit the ready renovation of the air contained in the interior. Still farther to secure the purity of the included air, a solution of potash, which of course absorbed the carbonic acid produced with avidity, occupied the bottom of the vessel. In winter, in the month of February, the experiment was made at the same time, upon five adult sparrows, which were all included in the apparatus. At the end of an hour they were found one with another to have lost no more than 0°, 4 c. or less than half a degree; some of them having suffered no depression of temperature whatsoever, others having lost as much as, but none more than, 1° c. The temperature of the whole then remained stationary to the end of the experiment, which was continued for three hours. In the month of July the same experiment was performed upon four full grown or adult sparrows. The temperature of these birds at the end of an hour had undergone a depression, the mean term of which was 3°, 62, and the extremes 6°, 5 and 2° c. At the end of the third hour the mean term of the refrigeration suffered was 6°, the extremes being 12° and 3°, 5 c. It ought to have been stated that in the experiment in the winter month, the birds had been for some time kept in a warm room, so that the sudden transition was the same in both instances, in the winter as well as the summer experiment. The diversity in the constitution of these birds, consequently, with reference to the powers of producing heat, was an effect of the difference of the seasons. Each month the temperature of which differs in any degree from that of the month before or after it, has an obvious tendency to modify the temperament or constitution in the manner which has been indicated. In summer we may presume, nay we may be certain, that the differences obtain in degree according to the mean intensity of the heat proper to each. This is

even to be proved by direct experiment. The month of August, as commonly happens, was not so hot as the month of July, and six sparrows treated in the same manner as those that were the subject of the July experiment already detailed, were not found to suffer refrigeration to the same extent. After the lapse of an hour the mean temperature of the six had sunk 1°, 62, and after three hours 4°, 87 c., from which it is obvious that with the successive declensions of the external temperature the faculty of engendering heat increases." 670.

Dr. Edwards compares the summer constitution with that of youth—the winter one with that of adult age—and the constitution of the natives of hot climates with that of the natives of temperate climates in summer. We pass over his observations on hybernation, having devoted so large a space to an article on the same subject by Dr. Marshall Hall.

Of the System on which the External Temperature acts primarily and principally.—Our sensations inform us that this is the nervous.

Influence of Temperature on the vitality of Cold-blooded Animals.—If several cold-blooded animals, for example batrachia, have the lungs and heart excised, so that only the nervous system remains, and if, in this condition, they are plunged in water deprived of air, they will live in it different spaces of time according to the degree of its temperature, the extremes compatible with their existence being zero and 40 c. It is towards the inferior limit, zero, that they live the longest. Towards the upper limit they die almost immediately. Temperature, consequently presents in the scale of variations just mentioned very remarkable relations with the vitality of these animals. Towards the lower limit or that of melting ice, it is obviously most favourable to life; towards the upper limit, it is most inimical to life, extinguishing it almost immediately. Here it is impossible to mistake the system upon which the variety of temperature exerts its first and principal effects—the nervous system.

If respiration only be annihilated by plunging these creatures under water deprived of air, the temperature of which is caused to vary as above, they will be found to present the same phenomena according to the degree of the heat or cold, but in a more striking manner. Temperature in this case has the same kind of influence, but the effects are more manifest, from the circulation of the venous blood prolonging life at every degree short of the one at the upper limit of the scale, at which life is extinguished quite as suddenly as in the former instance.

If these experiments are made in Autumn the animals will be found to survive twice as long as they did in Summer, and if the experiments are repeated in Winter, the tenacity of life will be found to have increased in a very high degree.

Influence of Temperature on the Vitality of Warm-blooded Animals.—Dr. Edwards remarks:—

"Warm-blooded animals having in general a high temperature at all seasons of the year, they must be compared in this respect with cold-blooded animals in the height of summer. On the one hand, heat with certain limits tends to increase sensibility and motility; warm-blooded animals, therefore, with a few exceptions, which always present a high temperature. constantly exhibit also, with a few exceptions, a high degree of sensibility and motility. The same

thing can only be said of the cold-blooded tribes during the continuance of the warm weather, on the other hand, again, high temperature tends to lessen the vitality proper to the nervous system, or the faculty of living without the agency of the ordinary stimuli. This is also the reason why, if respiration be interrupted among warm-blooded animals at all times, and among cold-blooded animals during the warmer seasons of the year, they all perish alike speedily, or nearly so. The difference in the time that elapses before life is extinct still depends on, or is in relation with, the difference of temperature. For in the hotter season of the year, cold-blooded animals never attain the temperature of the warm-blooded tribes, even in the most burning climates of the globe. Their nervous system will consequently have a higher degree of vitality in the sense already indicated; that is to say, they will not perish so promptly in summer under deprivation of air; but if they be immersed in water at the mean temperature of warm-blooded animals generally, which is about 40° c (101° F.), they will die as suddenly—(at least this is the case with those of small size upon which the experiment has been made)—as the warm-blooded vertebrata when deprived of the contact of air." 674.

The effect of cold (short of a destructive quantum of it) on the vertebrata is to produce reaction. This may be only capillary, in the part, or it may extend to increased frequency of the respiratory and circulatory movements. Exercise quickens these movements materially and enables the animal to resist cold more effectually. By habit, as is well known, this power of reaction may be augmented, and low temperature borne with facility.

Our space is so limited that we must pass over a few pages, and content ourselves with the following quotation. It goes to confirm the preceding detail.

"Legallois, by the employment of various means for impeding respiration, or limiting the consumption of air, found that *refrigeration of animals is in the compound ratio of the difficulty experienced in breathing and of the quantity of oxygen consumed; so that when, in two experiments, the difficulty of breathing is the same, the greatest extent of cooling occurs in that in which the smallest quantity of oxygen is vitiated, and the contrary.* Now, the end of the process of respiration being to change the venous into arterial blood, this conclusion of Legallois confirms directly the one of the two principal conditions—THE STATE OF THE BLOOD, which we have laid down as influencing the production of heat among animals, and to the knowledge of which we had attained by induction.

The results of the direct experiments which we have still to quote also come powerfully in aid of our inferences concerning the other principal condition, which we have assumed from induction, influencing the production of animal heat: this is THE STATE OR ACTION OF THE NERVOUS SYSTEM.

Sir B. Brodie demonstrated by a series of the most ingeniously conceived and happily executed experiments, that when animals were decapitated and respiration was kept up by artificial means, so that the blood circulated as usual, and the process of change from the venous to the arterial state, went on uninterruptedly, the ordinary quantity of carbonic acid being eliminated, all the while, that, nevertheless, the temperature fell rapidly, even more rapidly than when no artificial respiration was maintained.

Dr. Chossat completed these researches upon the nervous system in its relations with the production of heat, by demonstrating in a series of experiments the following very important fact, viz. *that the depression of animal heat is constantly in relation with lesions of the nervous system, whether these lesions implicate the cerebro-spinal system, or the system of the great sympathetic.*" 683.

Here we must pause. We have been unable to turn to Müller. But as there are one or two questions connected with the production of animal heat untouched we may on a future occasion recur very briefly to them.

POVERTY. ITS EVILS AND THEIR REMEDIES. PAROCHIAL MEDICAL RELIEF.

I. FORTY-FOURTH, FORTY-FIFTH, AND FORTY-SIXTH REPORTS FROM SELECT COMMITTEE ON THE POOR LAW AMENDMENT ACT; with the Minutes of Evidence and Appendixes. (Medical Inquiry.) Ordered by the House of Commons to be printed, 20th and 22d June, 1831. London, fol. pp. 147.

II. EXTRACTS FROM THE INFORMATION RECEIVED BY HIS MAJESTY'S COMMISSIONERS AS TO THE ADMINISTRATION OF THE POOR LAW. Published by Authority. London, 1833, 8vo. pp. 432.

III. REPORT FROM HIS MAJESTY'S COMMISSIONERS FOR INQUIRING INTO THE ADMINISTRATION AND PRACTICAL OPERATION OF THE POOR LAWS. Published by Authority. London, 1834, 8 vo. pp. 362.

IV. FOUR ANNUAL REPORTS OF THE POOR LAW COMMISSIONERS FOR ENGLAND AND WALES. London, 1835, 6, 7, 8.

V. PLANS FOR REGULATING MEDICO-PAROCHIAL ATTENDANCE: ALSO, OBSERVATIONS ON "SELF-SUPPORTING" DISPENSARIES AND UNION INFIRMARIES. By *John Charleton Yeatman*. 4th Edition, enlarged. London, 1837, 12 mo. pp. 70.

VI. MEDICAL RELIEF FOR THE LABOURING CLASSES, ON THE PRINCIPLE OF MUTUAL INSURANCE. By *H. W. Rumsey*, one of the Surgeons of the Chesham Self-supporting Dispensary, and Fellow of the Royal Medical and Chirurgical Society. London, 1837, 12 mo. pp. 69.

VII. MR. SERJEANT TALFOURD'S "LETTER" TO W. H. RUMSEY, Esq. Secretary to the Poor Law Committee of the Provincial Medical and Surgical Association.

THE absence of any legislative enactment, providing satisfactory attendance upon the poor in their hour of sickness, and sufficient remuneration for their medical attendants, has hitherto left the case of both to the tender mercies of parochial authorities, whose additional duty of protecting the pockets of the rate-payers in their respective parishes, they have only too generally considered to be the sole public object for which they were appointed to office.

The attempt, under the Poor Law Amendment Act, at indirectly coercing the necessitous poor to provide medical relief for themselves—and the medical profession to afford such relief on the parish account, at the bare cost of the necessary drugs, was an impudent and barefaced mockery of the sick poor, a wicked and unrighteous fraud upon a whole profession.

But the rights of the poor had their advocates, and those advocates were too wary not to perceive the monstrous inhumanity which must accrue from such an attempt, and not to take note of every individual instance of such inhumanity when it occurred. And it could hardly have been expected that an entire profession would remain dormant while their interests were sacrificed throughout the whole country, for no higher purpose than to enable well-salaried Commissioners to get up, from year to year, a fair and prosperous looking balance-sheet; and to send forth, from year to year, voluminous reports of the admirable working of that machinery whereby the sick poor have been neglected or maltreated, and their attendants rewarded in the inverse ratio of their labours. It was too much to be hoped for, even by those Commissioners, that the medical profession should be defrauded, or that the sick poor should be wronged, without remonstrance or murmur; and that while those same Commissioners pocketed their thousands of pounds per annum—the means and appliances maintaining handsome establishments—and quaffed their Champagne and Burgundy, the poor, as at Bridgewater, should be quietly regaled on barley-water and water-gruel!

But, it is nevertheless true, that not only was such a hope indulged in—it was even thought to have been realized, and, while the fraud upon the medical profession was prospering, and the injury to the sick poor was proceeding without any serious interruption to its consummation—their very material diminution in the land—the Gentlemen of Somerset House were drawing up a congratulatory report, and felicitating themselves on their success.

Appointed by, and subject to, the Commissioners, there is a more numerous body of Assistant-Commissioners; whose business it has been to reduce the respective Boards of Guardians to the moral dimensions, and to confine the amount of medical and other relief awarded the poor in their several Unions, to the pecuniary limitations, prescribed by their own immediate superiors, and to bolster up the worst features of that system which had called themselves into official existence.

The Assistants transmit their district reports of the state of things—the Commissioners avail themselves of their testimony to assure the public that all is well—and Mr. Chadwick prepares an annual report to that effect, garnished with the lauditory garlands wove for his masters' brow, by his masters' deputies.

One of the Assistant-Commissioners, writing from Bucks, observes, "the introduction of any new system, calculated to remove corruption, is attended with many difficulties; and seldom, till after the lapse of some considerable time, can it be got even into operation." "I have, therefore, great reason," he continues, "to congratulate the Board that this measure, the one of all others that had corruption and personal interest to contend against, and where prejudices both of the higher and lower classes united to impede its progress, has not only got into operation, but has so far cleared its way, as in the short space of a few months to produce beneficial results sufficiently powerful to convince the doubtful, convert the hostile, and to unite them in endeavouring to carry its principles more extensively into effect." *First Annual Report of the Poor Law Commissioners, p.* 249.

What as regards medical remuneration, the "principles" were, of "*this measure, which of all others had corruption and personal interest to contend*

against ;" it would puzzle a Philadelphia lawyer to say, unless, indeed, they were injustice and cruelty.

That the medical profession were *corrupt* enough to wish to take care of their own pence, while the Commissioners were pocketing the country's pounds—and the poor were sufficiently *self-interested* to shudder at the surrender of their own health and life into the hands of the lowest bidder, was no doubt monstrous and intolerable.

But this part of our narrative is too important to be lightly, or even hurriedly passed over; and we shall transfer from the "dim obscure" of their own report, to the clearer, brighter page of history, for a more open and public perusal, the following morceau, in elucidation of our patriotic Poor Law Commissioners' "principles"—the principles of that measure, whose well-working, according to the aforesaid veritable witness, W. J. Gilbert, Esq., had convinced the doubtful and converted the hostile, and united them both, to carry it more extensively into effect.

A richer specimen of Loyolan logic, was never coined, or issued from the Vatican.

"§ 25. Amongst the evils we found ourselves called upon to remedy, were a large class connected with the administration of medical relief. In our present Report, we deem it necessary only to advert to some of the chief evils of this class, and to the measures we have adopted with relation to them.

We found it a practice, in the great majority of instances, for a medical man to contract with the parish for the supply to the settled paupers of the parish, with medical attendance for a small fixed sum, on the expressed or implied condition that he should be allowed to make whatever charges he pleased for his attendance and treatment of non-parishioners, under suspended orders of removal, or an order of medical relief by the overseer. When the patient has recovered, he is sent home to a parish with a bill for medical attendance, including charges for medicine at the highest rates. Against these charges the distant parish to which the pauper belonged had no adequate protection. The pauper was exposed to the danger of being supplied with medicines considerably beyond what was required for his proper treatment. Instances have come to our knowledge where, in large populous parishes, the profits of attendance upon paupers under such circumstances have been upwards of £300 per annum. The inferior officers have been fed by the medical officer, to search out and give him information of the cases of this description. As a further evil of this system, we may mention that paupers with their families have been removed from their parishes at a great expense, when each head of a family would otherwise have preferred remaining and seeking employment in the parish where his sickness occurred. By countenancing these practices, parishes were in the habit of creating burdens for each other. As a check to this system, and to the general expense of medical relief, we have generally required that medical services should be retained by contract and open tender, including, as a condition, that the medical officers should attend at the same charge all patients on the order of the overseer, whether the patients were parishioners or non-parishioners.

In regulating the appointments of medical officers within the new unions, we have acted on the presumption, that by the words of the Act (that the medical officer shall be 'a person duly licensed to practise as a medical man,') it was intended to include equally physicians, surgeons, or apothecaries, duly licensed to practise as such. Applications have been made to us to prescribe, as the qualification of the medical officer of any Union, that he should be a member of the College of Surgeons as well as of the Apothecaries' Company ; but as at present informed, we do not think that the public interest would be advanced by confining the qualification within narrower limits than those traced by the words

of the Act, and which conform to the general practice. With respect to the general professional qualifications of the medical men who come within the words of the Act, we have relied on the diplomas of those who are charged by the legislature with the duty of examining the qualifications of the candidates for practice, being assured that the recent improvements in medical practice and education are such as in general to render the later diplomas certificates of a degree of competency, equivalent to much practice on the parts of those who have had an earlier education. Under these circumstances we have considered that the interests of the public and of the profession itself were the best served by keeping the situations of medical officers in the new Unions open to the competition of the whole body of medical practitioners.

Instead of attempting to fix the price of the services of the medical practitioners for the Union, we deem it the most advantageous that each practitioner should fix the price of his own services, under competition. Amongst the inducements to accept these appointments, are, *the credit* of *the appointment* of medical officer to an Union by a Board of Guardians, the *wider fields* these appointments afford *for the display of care and skill, and for obtaining reputation* leading to more profitable practice: inducements differing in degree, but similar in kind to those upon which men of the most eminent skill find it to their interest to give their services to the chief medical institutions of the country. We may be sure that the medical practitioner will, in fixing upon his terms, do nothing which he considers will not on the whole be advantageous to himself; and next, that he will consider the interests and advantage of his own profession. We have found it necessary, as a security against undue charges even under competition, to adopt as a rule that the aggregate charges for medical relief within the new Unions, shall not exceed the aggregate of the former expenditure for medical relief in the separate parishes now included in the Unions. Instances have occurred where the local medical practitioners have combined to prevent a competition. The course taken in these instances for the protection of the rate payers, and to secure the best treatment to the paupers, has been to suspend our sanction to the appointments, and to cause advertisements to be made to throw open the offices to the competition of practitioners from a distance, or of the profession at large.

In some Unions, as in the Wycombe Union, it has been provided that the terms of the contract should be a remuneration, at a given sum per head, on the number who receive medical relief; but with the proviso, that the gross charge should not exceed a given amount. It is stated to us in evidence, that this mode of proceeding, though adopted reluctantly by the medical profession, has operated very beneficially. The surgeon of the Amersham Union, Mr. Thomas Brickwell states, in the course of an examination.

I approve of the system; but the amount in the present contract is inadequate; I think I shall lose a guinea a week by it. In some of the parishes it is at present only one third of what I have received in former years for the same time. But I approve of the system, for these reasons; it is a self-acting check upon the relieving officer in giving improper orders, or withholding proper orders; upon the applicant for medical relief, in making him feel that in receiving it he is a pauper, and causing the parish a specific charge for him; and upon the medical man, by causing an inquiry into each case, so that none can escape attention; and by that means also secures proper attendance to the patient. Indeed, the mode of contract forms a complete system of check and security in cases of pauper medical relief, the want of which was so much felt under the old system.

Has it tended to curtail the evil of sending all parties to the parish doctor for medical relief, which was so prevalent under the cases of contract in gross?—Yes, it has;—I have many cases now that I am attending as independent patients, who used always, before, to come to me as paupers. One case is that of a woman of Fenn; her son is a master bricklayer, with whom she resides, the

cottage and garden their own. She has a daughter about 30, a sempstress, who gets a very good living. This woman was, with her daughter, always attended by the parish. On my telling this woman that the parish paid a specific sum for her, she refused to be attended, and now pays for herself. There are many cases which evidence this effect of the system.

Of course, the new independent patients pay you?—Yes, they do; they pay us at the time they have the medicine.

Now, although you do not receive so much from the parish contract, will not the amount by these new independent patients more than make up the difference? —No, I think not; but it will go towards it.

We anticipate that the introduction of a better system will be beneficial for the destitute sick, as well as beneficial to the labouring classes generally; and that it will be found conducive to all proper interests of the respectable portion of the medical profession.

It will, however, be observed, that the change in the system has not, in many instances, been so long in operation as to develope the whole of the effects which may be anticipated from it, in promoting voluntary and independent associations to provide for the casualties of sickness and mortality.

But even now the reports made to us of the very satisfactory effects of the operation of the rule are becoming daily apparent. We cite the following passage from a recent report made to us by our Assistant-Commissioner, Mr. Hall, as illustrative of the tenor of other incidental communications on the subject:—

The good effects of your arrangements as respects medical relief, are shewing themselves in the shape of medical clubs among the labourers. One of the surgeons of the Wallingford Union told me that several were in process of formation in his district; and I have heard that elsewhere the labouring class has evinced the same degree of foresight and providence; has given the same proof that, when thrown upon his own resources, and taught to rely upon his own exertions, the independent labourer can, and will adopt measures answering to the necessities of the case.

Mr. Gulson states in the recent report from Oxfordshire, 'medical clubs are starting up in all directions. The proceedings of the Board, as regards the medical department, have already been productive of the best results. Highly respectable medical men are undertaking to attend all cases for an annual subscription of 2s. for a single person; and for 4s. 4d. they engage to attend a whole family, however large, so that it does not include children above sixteen years of age. At Witney, Benson, and other places, the labourers are subscribing in considerable numbers to independent medical clubs.' Mr. Gilbert reports to us that in several parts of Buckinghamshire similar effects, resulting directly from the change of medical relief, have been developed in a striking manner."—*First Annual Report of Poor Law Commissioners*, pp. 51 to 55.

Let our readers attentively peruse the first paragraph of the preceding extract, in connexion with the following report from His Majesty's Commissioners for inquiring into the administration and practical operation of the poor, out of which report grew the Poor Law Amendment Act itself, and the Commission under it. The part of that report to which we entreat particular attention is headed—

"OUT-DOOR RELIEF OF THE IMPOTENT."

"The out-door relief to the impotent (using that word as comprehending all except the able-bodied and their families) is subject to less abuse. The great source of poor-law mal-administration is, the desire of many of those who regulate the distribution of the parochial fund, to extract from it a profit to themselves. The out-door relief to the able-bodied, and all relief that

is administered in the workhouse, afford ample opportunities for effecting this purpose; but no use can be made of the aged and sick, and there is little room for jobbing, if their pensions are paid in money. Accordingly we find, that even in places distinguished in general by the most wanton parochial profusion, the allowances to the aged and infirm are moderated.

The out-door relief of the sick is usually effected by a contract with a surgeon, which, however, in general, includes only those who are parishioners. When non-parishioners become chargeable from illness, an order for their removal is obtained, which is suspended until they can perform the journey; in the mean time they are attended by the local surgeon, but at the expense of the parish to which they belong. This has been complained of as a source of great peculation; the surgeon charging a far larger sum than he would have received for attending an independent labourer or a pauper, in the place of his settlement. On the whole, however, medical attendance seems, in general, to be adequately supplied, and economically, if we consider only the price and the amount of attendance." p. 43.

So then, according to a Royal Commission, including within it such men as the present Bishops of London and Chester, and the Right. Hon. W. Sturges Bourne, and not even excluding from it the Poor Law Commissioner's Secretary Edwin Chadwick, Esq. medical attendance, under the old system, appears to have been adequately and economically supplied, if the price and the amount of attendance only, be considered. Whereas, the Poor Law Commissioners, eighteen months after, include "amongst the evils they found themselves called upon to remedy," "a large class connected with the administration of medical relief!"

But what are the evils which constitute this "large class?" The Commissioners "deem it necessary only to advert to some of the chief" of those "evils;" that is, to *one*, and *only one*, as "*some* of the *chief*" evils of this class, and that one is, the complaint already made to the Royal Commission of undue charges on the part of practitioners, for the medical attendance given to non-parishioners! Like the solitary testimony of Mr. Brickwell, one out of thirteen surgeons in the Amersham Union, it is brought ostentatiously forward, to justify an alteration for the worse, when no alteration at all was called for by the public, and none whatever recommended by the Commission of Inquiry.

Then come the "remedies" for "them," that is, in the correct and simple language of truth, for "it." And what a remedy! to reduce medical men to the necessity of putting their skill and humanity up to sale by tender and contract, as the butcher and baker their bread and meat! But, "*we may be sure that the medical practitioner will, in fixing upon his terms, do nothing which he considers will not be on the whole advantageous to himself; and next, that he will consider the interests and advantage of his own profession.*"

Indeed! but it is presently added, "instances have occurred where the local medical practitioners have combined to prevent a competition," and what was the "remedy" then? for "we are sure," to borrow the Commissioners' words, they would only do what they considered to be at once advantageous to themselves and their profession. Why, the office was thrown open by advertisement "to the competition of practitioners from a distance, or of the profession at large," and this, of course, altogether "for the protection of the rate-payers," and,—"to secure the best treatment to the paupers!" It was not, in the most remote degree, for the purpose of overawing the local medical practitioners, by the prospect of losing part of their

private practice, into doing any thing which they were agreed would be disadvantageous to themselves and injurious to the interests of their common profession.

But what were the effects of the "better system," which it was anticipated would be alike "beneficial for the destitute sick" and "to the labouring classes generally," as well as "conducive to all *proper* interests of the *respectable* portion of the medical profession?" Those excellent results may be seen in the rise and progress of "medical clubs" among the labourers, and the spectacle of "highly respectable medical men, undertaking to attend all cases for an annual subscription of two shillings for a single person; and four shillings and four-pence for a whole family, however large!"

That neither the profession, the poor, nor the public, were either "convinced" or "converted" by the Commissioners' or their Asssistants' reports in praise of themselves and their proceedings, subsequent events clearly demonstrated. The parochial practitioner complained that he was hard worked and ill paid. The sick poor cried aloud for more and better help, and complained bitterly that they were either neglected, or treat unskilfully. The public at large, or that part of it which takes an interest in such matters, wondered that their pockets were as often visited, and as fully taxed, as before the introduction of the "better system," and they complained that they did not find their own condition one whit improved by the abridgment of the poor man's physic, or the reduction of the medical officer's salary.

If the following excerpt from a subsequent report does not convict the previous one of what the "Times" calls "enormous lying;" we are certain it will fail to "convert" any who were not previously converted from their hostility to the "better system" from which so much was anticipated, and from which so much that was beneficial did actually result, according to the Assistant Commissioners.

"We think it is incumbent upon us again to allude to the arrangements respecting medical relief, which has so often been the subject of animadversion and complaint in communications addressed to your Lordship by different members of the medical profession.

It has been so perseveringly maintained that the medical relief to the poor has been inadequately provided for, and that a course has been pursued by us, injurious to the medical profession, that we think it necessary to re-affirm the statement which we have made whenever we have had a fit opportunity for doing so; that it has been our wish and intention to provide adequately for that important branch of pauper relief; and that in so doing we have never sought to disturb or displace the medical practitioners in their respective districts. Whenever this has been done (and the introduction of other individuals from a distance has occurred in but very few instances) the guardians have been forced to adopt that course by the inadmissible demands which have been made upon them by the gentlemen who now complain of their practice having been interfered with.

We wish indeed that it were possible for us, within the limits of this report, to exhibit to your Lordship a full and complete representation of all that has been done as to this branch of our duties; and we think we should be able clearly to demonstrate that the complaints of the medical profession have no foundation.

No sooner, however, was any part of the country formed into Union, than the propriety of altering the arrangements established for the purposes of medical relief in the separate parishes, and of resorting to a new and more combined distribution, became apparent. The effecting of this object

caused some disturbance to the medical practitioners, extending the practice of some, whilst it curtailed that of others. The division into districts has given rise to much complaint. The districts are represented by the medical practitioners as being generally too large, and as otherwise inconvenient. These districts, however, have been deliberately formed by the respective Boards of Guardians, who, from their local knowledge, must be considered to be the most competent judges on the subject; and we have reason to believe that in almost every instance the best arrangement was adopted.

Another ground of complaint is, that the medical gentlemen have, by the Guardians of some Unions, been called upon to make known, by the way of tender, the amount of payment for which they would undertake to supply medical attendance and the requisite medicines in any district which the Guardians might be desirous of providing for. Although this mode of proceeding is not rendered imperative by any thing contained in our rules, there is no doubt that the Guardians have generally resorted to it, and have by us, through our Assistant-Commissioners, been advised to do so; but it was never supposed that such a course was derogatory to the character of the profession. We are ready to admit that the principle of competition, though it is strictly, and to the fullest extent, applicable to the supply of drugs and many other articles used by the medical practitioners, is yet capable of only a modified application when brought to bear upon the acquired skill and knowledge, and other personal qualifications, the possession of which must and ought so materially to influence the Guardians in the selection they shall make from amongst the medical candidates: and in all our operations this limitation of the principle of competition has been recognized and acted upon; the Guardians having never been required to accept the lowest tender, and having in fact, in very many instances, been induced to set it aside solely with reference to the considerations of character and personal qualifications, to which we have alluded."

This was by way of apology for the treatment of the poor and the profession. It failed of its effect, the murmur of discontent grew louder, and Parliament was forced, by the petitions that crowded its table, to an inquiry.

This was instituted—a select committee of the House of Commons was appointed—they sat, they took evidence—they made a report; and "highly respectable medical men" were no longer to drive a disgraceful bargain with paupers to save themselves from the dire necessity of subscribing to a more disgraceful contract with Boards of Guardians. Instead of half-a-crown a case being deemed adequate and ample remuneration, 6s. 6d. was not considered too large a sum to recommend as an equivalent for medical relief to any and every individual pauper in time of sickness.

The "*better system*" with all the Commissioners' sanguine "anticipations," and all the Assistant Commissioners' florid statements of benefits *said* to be realized, received its quietus from the Report of the select Committee of the House of Commons. We proceed to examine the EVIDENCE OF THE MEDICAL WITNESSES, upon which that Report is founded.

The witnesses examined were Sir Astley Cooper, Bart., Drs. Kay, an assistant Poor Law Commissioner, Marshall Hall, Elliotson, Thompson, and Webster, and Messrs. Rumsey, Ceely, Rowe, Farr, Evans, and Toogood.

1, SIR ASTLEY COOPER:—had known great evils arise from the districts being too extensive. One such district is nine miles long by four wide—a poor woman has her child taken suddenly ill with acute disease—she is

obliged to go to the distance of nine miles to a medical man—he may not be at home—he may be in the opposite direction—it is a long time before his advice can be procured, and a still longer time before the medicine can be got. To remedy this double evil, he recommends the limitation of rural districts to a diameter of five miles, and the presence of a depot for medicines in every parish.

Thinks the system of letting the medical offices "by tender," MOST HORRIBLE—that it is quite an absurdity for lay Guardians to attempt to form an opinion upon a medical case—that, it would certainly be satisfactory to the profession and useful to the poor, if there were some medical guardian appointed, who should be referred to in matters of that kind—and that 7s. per case would be about a fair remuneration for the medical attendant's labour, &c. in rural districts.

The Baronet's answers to two of Mr Wakley's questions do him infinite credit, and the first of those answers we would have inscribed in letters of gold, and hung up in the Board Room of every Union throughout the kingdom.

"16048. Do you consider it of importance that the medical practitioner in attendance upon the poor should be a man of some standing and residence in the district, and that he should also be in attendance upon the rich?—*You ought to look out for the same man to attend upon the poor as you would be satisfied with in your own family;* MAKE THE CASE YOUR OWN AND YOU ARE SURE TO BE CORRECT"

"16049. You do not think it advisable to introduce strangers to practise among the poor if there are resident practitioners who are willing to take the offices? If a very clever man comes into that part of the country very highly recommended, I see no reason why you should exclude that medical man, even supposing there were resident practitioners there; but if a medical man comes into the district and says, 'I will attend for £50 where the resident practitioner has offered to attend for £100,' *there can be nothing more horrible, or more degrading to the profession, or more injurious to the poor.*"

Sir Astley also considers three things "absolutely essential," as qualifications for office as parochial medical attendants upon the poor. 1st. The having passed the ordeal of the Apothecaries' Hall. 2nd. The possession of the diploma of the Royal College of Surgeons. And 3rdly. The having undergone an examination before a midwifery board, (no such board being now, nor ever having been in existence in this country.)

2. DR. MARSHALL HALL;—considers that medical attendance upon the sick poor involves a severe moral and professional responsibility;—that "offers by tenders" are derogatory to the medical profession; that much practical experience is necessary for the performance of the duty; that it should only be entrusted to men of two years' standing in the profession, acquainted with the particular locality, in the habit of attending upon the rich as well as the poor, resident in the centre of a district, and that district from 12 to 16 square miles; that, in electing officers, fixing the remuneration and prescribing the duties to be performed, a professional authority should be available for reference; that the medical attendant upon the poor amidst an ordinary population of 10 to 12,000 would have sufficient work to

perform; that the poor, as a body, need, in acute diseases, even more attention than the rich; are more liable to contagious diseases; that it would be desirable to render the medical appointments more conducive to the advancement of science, more satisfactory to medical men, and more beneficial to the poor, than they are rendered at present; and that "*the remuneration should be such as no man should be ashamed of accepting, and such as no set of men should be ashamed of proposing.*"

We print this last opinion of the worthy Doctor in italics, for the especial benefit of all whom it may concern, including Poor-Law Commissioners and Assistant Poor-Law Commissioners, Peers of Parliament, and Members of the House of Commons, Boards of Guardians in particular, and ratepayers generally.

3. DR. JOHN ELLIOTSON: thinks, the medical districts should not exceed 12 square miles, it being an act of justice to the poor that the medical districts should be as small as possible; that one reference should be medical with regard to all medical appointments throughout the kingdom; that the surgeons in rural districts ought not to have less than six shillings and six pence, or 7s. a case; that the system of "tender" is "most injurious and most improper in every respect," making medical men do in that particular what they condemn each other for doing in private practice, and being a temptation to men to attend to the poor far less than they otherwise would; that, no one ought to be allowed, however long he may have been in practice, to undertake the care of an extensive district without medical control.

The good sense and honesty of Dr. Elliotson are conspicuous in his answers to the questions 15869, 15870 and 15871; and we quote them entire:—

"15869. Would you recommend that a man should be of some standing in his profession, say two or three years, before he is permitted to take a situation the duties of which are of such a responsible character as those connected with the Poor Law Unions?—I doubt whether he would be more fit in 2 years, if he had not had a good opportunity of improving himself by practice, than at the beginning; because he would have so little private practice in the first 2 years, that he would not much improve himself by it; and at the same time he might have forgotten a good deal that he knew when he came from his examinations; a man must learn his profession by experience, as well as by education at the schools. . .

15870. If he had been in practice and had acquired additional experience in that way, would he not be more fitted to undertake the medical duties of a Union?—He would; but he would not perhaps be so able to devote himself to it as a young man who had no other patients.

15871. But still, he being of some standing, and resident in the neighbourhood, it is likely that he would be better acquainted with the circumstances of the poor, and that his own character would be better known to the inhabitants?—Certainly; and it would be more satisfactory to the poor than to see a person appointed whom they had never heard of before and who was perfectly a novice." —*Minutes of Evidence, &c.* p. 118.

The further examination of this physician elicited a remarkable testimony to the efficiency of the medical attendance upon the sick poor in London, so far as it has fallen under his own observation. He considers them to have been very well attended generally, and in the Hanover Square district, where

he resides himself, believes them to have been attended in the most admirable manner.

His examination closes with the following sentence upon the abominable tender system, the "better system" of the Poor Law Commissioners, from which *they anticipated*, and their Assistants *found* so much good to result:—"I have spoken against it all my life, and those who have known others accept of it have shaken their heads with disgust; and again, judging from human nature in general, it must be impossible, I think, for a medical man to do his duty when he has an inefficient remuneration; it must be injurious to the poor; and it is heart-breaking to a man in any profession to work for nothing." p. 119.

4. DR. ROBERT DUNDAS THOMSON.—This gentleman's testimony went principally to satisfy the House of the vast extent to which drugs are adulterated for the purpose of meeting the prices offered by different sets of purchasers; and the inference from the facts adduced by him is, that the temptation to supply the poor with adulterated and worthless drugs, will increase in the ratio of the deficiency in any such provision made for their supply.

5. DR. GEORGE WEBSTER'S evidence is only noticeable for an instance of impudent dictation and tyrannical exercise of authority, on the part of the Camberwell Guardians; and of cool and cavalier insolence on the part of the Poor Law Commissioners, for which we have no room, and must refer our readers to the "Minutes" themselves, while we pass on to—

6. DR. JAMES PHILLIPS KAY, an Assistant Poor Law Commissioner, whose "testimony" we at first thought of consigning "to the tomb of all the Capulets," but on reconsideration have resolved to give him the benefit of a little wider notoriety than he at present enjoys. He slips away like an eel from every attempt on the part of his examiners to elicit truths from him, whether of fact or opinion, the full scope and tendency of which he may not happen to perceive, or perceives to be fatal to himself and the cause of which he is the paid champion. One example of this *slipperiness* will suffice to exhibit that quality of his testimony:—he is asked—

"5170. If a Union had engaged a medical man for six months, and had great reason to be satisfied with his conduct, you would not wish them to change him! —My only object is not to encounter those feelings of rivalry on the part of the medical practitioners, which interfere with their kindly relations in society." 14.

This answer does not appear to have contented the Member for Finsbury, and he tries his hand at skinning the eel.

"5171. (Mr. Wakley.) Do you not find that, when a medical officer anxiously discharges his duty, he in a short time obtains the confidence of the paupers; and do you not think it would be an evil to remove such a man from them!—I think the qualities of medical men resident in the Union are well known to the inhabitants, and if there were any person whose attendance was objected to by the poor, he certainly ought not to be a person selected for the duties of the workhouse."

Having glided thus dexterously from between the fingers of Mr. Wakley, the Chairman appears to have given him over as a bad job, and allows him

to escape with the questions unanswered, by calling upon him for another Report which very properly winds up his examination.—a Report, viz. of Mortality in the Workhouses. And even that he mystifies by making four quarterly returns instead of one annual.

The Doctor's memory is at times singularly leaky:—

"5083. Will you state the highest and lowest population in the two counties? (of Norfolk and Suffolk.)—In casting my eye over the Suffolk medical districts, I do not find that any rural medical district contains a population greater than 6,800, which occurs in only one instance; I find that one town district, Ipswich, containing a population of 6,900.

5084. What is the salary of the medical officer in that district?—I cannot state that.

5085. What is the cost per head in that district?—I cannot tell as respects the particular medical officers' district; I could give information of the salaries respecting an entire Union."—*Minutes of Evidence*, p. 4.

Some important admissions, however, are wrung from the Assistant Commissioner, the first of which is, "I am not prepared to justify the present arrangements, excepting as provisional, and I expect changes to be made in the arrangements!" And a second, that—"The time is past, for the operations of the system by tender."

And some very valuable facts are elicited, which if taken due advantage of, may lead to a more equitable adjustment of the balance between medical labour and medical remuneration—and to a juster settlement of all the medical questions involved in that one great subject—Poverty, *its* evils, and *their* remedies. Before concluding this article we shall notice summarily one of those evils—sickness; with a view to bring forward a remedy—adequate medical relief—and shall then recur to Dr. Kay's evidence.

7. EDWARD EVANS, Esq.—This gentleman's testimony relates to his own locality alone, (St. George the Martyr, Southwark,) and makes out a clear case of over-work and under pay—we say a clear case, and might add, a *common* one. Where, under the system, can a case be discovered of pay and labour equalized? He attends one half of a parish, the population of which is 40,000, and receives £110 per annum. The cost of drugs for his paupers averages £50 a year. The average number of *persons* attended by him within that period amounts to 1,229; and of *cases*, 2,059. The average remuneration for each case is—hear it, humanity! believe it, charity! make merry over it, political economy! embroider it on your pockets, every ratepayer in the kingdom! rejoice and be glad, Commissioners and Assistant-Commissioners! elected and ex-officio Guardians;—15729. *What is the amount of remuneration in each case?*—A SHILLING AND A HALF-PENNY IN EACH CASE, ATTENDING FROM SEVEN TO TEN DAYS."

Mr. Evans is asked, "15740. Have you much private practice?—I have considerable. I have been 22 years in the same neighbourhood. 15740. Have you much time to spare for private practice? My time is a great deal occupied by my private practice, as well as the parish practice."

We think the Guardians have exercised a very wise discretion in dividing the medico parochial labours of St. George the Martyr, between four instead of two medical men. No two can attend to a "very considerable" private practice, without awfully neglecting so very considerable a parish practice.

But, of course, neither Guardians nor Commissioners think of a more equitable adjustment of remuneration to labour among the four than between the two. Increase the labourers! Yes, they are too few to do the work. Increase the amount to be divided among them? No, they will still receive *one shilling and a half-penny per case*, for medicines and from 7 to 10 visits. What could they look for more—and what would become of the rate-payers' pockets, if you gave them more?

8. GEORGE ROBERT ROWE, Esq.—This gentleman's evidence, like Mr. Evans', also makes out a strong case of ignorance, incapacity, and meanness, on the part of the officials connected in the medical arrangements of the Epping district. Ignorance, when not wilful, is alike pardonable and pitiable; to be angry with incapacity were to quarrel with creation, for "all men are not wise;" but meanness is a low vice which deserves to be whipped out of men and things whenever and wherever it is detected.

The surgeons of that district made an estimate, and offered to attend the poor at the rate of 2s. a head. They were met with a refusal, and a scheme offered to them of 2s. 6d. per head, per annum, for a man; 1s. 6d, for a woman; and 6d. for a child. This, with one exception, was refused by the rest of the medical men.

"15606. Was that for each case they attended, or for each individual of the pauper population?—Each individual in the receipt of weekly relief; but the Guardians reserved to themselves the privilege of increasing that number. The best way to illustrate it would be to give the population of my own parish; the pauper population of my own parish amounts to 440, or something more than 400; and in the paupers' schedule they comprised 100, that is 100 were the only persons receiving weekly relief; therefore, if any of the other 300 became sick, they had reserved to themselves the privilege of putting the sick patients into the schedule upon the same terms.

15607. (Mr. Wakley.) At 2s. 6d., 1s. 6d. and 6d. a head?—Yes, so that in the event of a family of six children, and a man and his wife, which is frequently the case in our district, being attacked by sicknsss, the medical man was called upon to attend the poor family for 7s.

15608. For the whole year?—Yes. 15609. (Chairman.) Whom do you mean by paupers?—Those who are not capable of maintaining themselves when they are sick. 15610. Do you mean to describe a man as a pauper who is not in the receipt of parish relief?—I consider that the moment the man applies to the parochial officers for medical relief, the man becomes a pauper. 15611. No doubt if a man applies for relief of any description and receives it, he becomes a pauper; but were those 400 in the receipt of relief of any description?—Only 100 were in the receipt of medical relief, but the other 300 were entitled to call upon the medical man for assistance, because their necessities were of that nature, that they could not provide it themselves. 15612. How do you know that?—From my own connexion with them; they were always considered paupers by me, from my having attended them for so many years. 15613. Then the state of things is this; 100 persons were receiving parochial relief, and, in your estimation, 300 other persons were in such circumstances that if sickness attacked them they would be under the necessity of applying for medical relief? Yes, I am quite sure of that. 15614. But the number of paupers, strictly speaking, were limited to 100?—Yes. 15615. And the remaining 300 were persons in such circumstances as to render it probable that, in the event of their becoming ill, they would not be able to provide medical relief for themselves?—Not only probable, but certain. 15616. Who formed an opinion upon that

subject?—This was a scheme suggested for our approval by the Board, under the direction of the Assistant Commissioner, Mr. Power. 15617. Did the Board of Guardians come to this decision; that whereas, 100 persons were regular paupers in the receipt of constant parish relief of some description or another, 300 other persons were in such circumstances as to entitle them to medical relief in the event of their being ill?—No; they considered that those 300 were liable to become paupers the moment they were sick, because they made the provision for it; in fact, *they made the medical man liable to attend* 400 *paupers, and paid for only* 100 *!!!*"

It will be admitted we presume, that at such a rate the Doctors came off badly enough—and we presume there will be as little difficulty in admitting that the pockets of the rate-payers were tolerably well protected by Guardians and Assistant-Commissioners between them. But how fare the poor under this improved economical administration of medical relief?

The medical men of the district refused the terms of the Guardians and the Assistant Commissioners. What happened? Two out of the "plenty of talented young men from Somerset House," were sent down to supplant the resident practitioners.

"15667. What became of the officers who were in the Ongar and Epping Unions, and who had displaced the resident medical practitioners?—There were two of them; one was dismissed in consequence of a Coroner's inquest in the Epping Union; and another was dismissed in consequence of another Coroner's inquest! 15668. (Chairman.) What was the nature of those inquests?—They were inquests on the bodies of persons that they had attended; I do not know the particulars!! 15669. Do you happen to know whether there was anything in the inquests reflecting upon their treatment of the cases?—I presume there was, or they would not have been dismissed!!!"

Need we repeat our question, how do the poor fare under the "better system?"

We pass on to the evidence of

9. JONATHAN TOOGOOD, Esq. of Bridgewater.—According to this gentleman, there is one medical district in his neighbourhood, seventeen miles in extent, containing fourteen parishes, and part of it ten miles from the medical officer—besides this fact, there is nothing material elicited by his examination. His opinions coincide with those of other witnesses respecting the extent at which a rural district should be fixed, and the remuneration per case to be awarded to the medical officers.

10. ROBERT CEELY, Esq. of Aylesbury.—Admits that the "tender" system is no novelty, and that, in his neighbourhood, where it was in use before the Poor Law Amendment Act came into operation, "the medical men were more to blame than the authorities." He furnishes a laughable exhibition of the ignorance of Mr. Assistant Commissioner Gilbert:—

"15293. [*Chairman.*]—Do you know whether Mr. Gilbert had any personal communication with the medical men of the district?—He had not: *he fancied, in the first formation of the Union, that one medical man could do the duty of the whole Union;* he did not make that as an official communication, but he made it to a Guardian privately, who told him no such thing could take place; I had this from a person in communication with him.

"15294. [*Mr. Wakley.*] You have no doubt that he expressed that opinion?

—Not the slightest. 15295. What is the extreme length of the Union?—*The extreme length, in one direction, is twenty-three miles, and in the other direction, fifteen!*" p. 6.

One of the expenses incidental to a medical appointment is also forcibly stated. On one occasion Mr. Ceely attended a parish in which an epidemic prevailed, and it cost him £10. to furnish wine and beef-tea for the patients because he was anxious to get them well as soon as he could; he was not compelled to do it; but the cases were so numerous and so distressing at the time, that he could not withhold that assistance.

Mr. C. thinks it desirable for a person who is practising amongst the higher classes to be aware of the epidemics that are prevailing among the poor; it is valuable to the poor, useful to himself, and advantageous to the community. He is also of opinion that greater facilities should be afforded to the poor for obtaining medical assistance than now exist; and sees, as an objection to payment per case, that *it restrains Guardians from giving orders for medical Relief.*

Our space does not allow of our going at length into the examination of this witness—it will well repay any one who has inclination and leisure to peruse it in the "Minutes of Evidence" themselves. So far as we have yet passed those Minutes under review, he stands out conspicuous as one who makes the pockets of rate-payers, and even the reward of medical labour, very secondary considerations in comparison with the efficient medical relief of the sick poor. We have not the pleasure of a personal acquaintance with Mr. Ceely, but his evidence on this occasion has convinced us that he is what others would be thought to be—a lover of his kind, and a friend of the poor, in deed, as well as word.

11. WILLIAM FARR, Esq.—This gentleman has been long and favourably known to the profession as a talented statistician; and by this time the whole country is in possession of no mean specimen of his ability in his letter to the Registrar General, published in that functionary's first report.

Through Mr. Wakley, all the returns from the different Unions were submitted to him—and the result of his examinations of them are given in evidence. According to that—the number of Unions is 501, the area of those Unions in square miles is 39,205, and the area of each Union in square miles is 78. 314 Unions contained 1,137 medical districts, consequently, each Union is divided, on an average, into 3·62 medical districts; that is 100 Unions are divided into 362 medical districts; 78 square miles, divided by 3·62, gives the average area of the medical districts, and from that it appears that the area is about 21½ square miles.

It is obvious that a very considerable disproportion must subsist in the size of different Unions Two of the larger are mentioned—Leighton Buzzard is 55, and Newbury 72 square miles. In both, the surgeons reside in the centre of their districts, removed eight miles in the one case, and seven and a half in the other, from the extremities.

"These numbers do not give the extreme points, but the distance North, or South, or East, or West; if therefore, the greater distance should occur between these points, it would not be given. In the Wallingford Union the area of the medical district is 26 miles; the boundary of the Union is eight miles from the surgeon's residence in one direction. The Workingham Union district No 1,

the area is 25 square miles; but the surgeon residing out of the district, the distance from his residence, in one direction, is eight and a half miles. In Devonshire, the districts are generally small, but the Oakhampton Union district No 2, is 54 square miles in area, and the boundary is eight miles from the surgeon's residence in one direction. In Northleach, in Gloucestershire, the upper medical district is not distinguished from the lower, and the area of both is 109 square miles. The surgeon resides out of the district apparently; it is eleven miles from his residence, to the southern extremity. Districts 1 and 4 of the Kington Union, Herefordshire; Mr. Merrick was the surgeon in 1837. The area is not given in square miles, but the distance from the surgeon's residence in one direction is only one mile, in another ten miles; in the Ledbury Union, district 2, the surgeon appears to reside out of the district, the distance from his residence is eleven miles in one direction, ten in another; in the Leominster Union, district 3, the area is twenty-five square miles; but the surgeon residing out of the district, the distance of the boundary from his residence in one direction is ten miles. There are few returns from Lancashire, I suppose but few Unions have been formed; but the distance from the surgeon's residence in the West Broughton district is eleven miles in one direction; and in the Cotton district, ten miles in one direction. In Norfolk, the Thetford Union, comprising parts of Thetford and Hopton, the distance from the surgeon's residence is eleven miles and a half in one direction." pp. 97, 100.

"In Northumberland, the Haltwhistle Union, East and West division, comprises an area of 108 square miles." "In Salop the distance of the boundary of district 2, Clun Union, in one direction is eleven miles, in another four, in another 5, in another 6; in Westmoreland, Shap Westward comprises 98 square miles; the distance from the surgeon's residence in one direction, nine miles; in York, the Driffield Union comprises 115 square miles; its distance from the surgeon's residence in one direction is nine miles; in another, six; in another, six; in another nine." p. 100.

The unnecessary expense of time and labour to the poor, and to the profession, by such an arrangement of districts is obvious. The peril to the sick poor, in every case of emergency, requiring prompt attention, must be equally obvious. Mr. Farr's statistical researches help us to a still further knowledge of the impossible duties assigned to the medical officer in populous as well as extensive districts. The Leighton Buzzard and Newbury Unions already referred to, contained in 1831—the former, 11824, the latter, 18,999 inhabitants. The number of cases treated in the former was 1,845, the number constantly sick and constantly under the care of the medical officer in Leighton Buzzard was 100; in Newbury Union, 93. If those persons were seen every other day, the one officer would have to visit daily 50 persons, scattered over an area of 55 square miles, and the other 46, similarly scattered over an area of 72 square miles. The Dover medical district comprises a population of 20,507; that of Sevenoaks and Shoreham, 13,735; of Leicester No. 1, 23,954; No. 2, 13,740. The Lincoln Union, district No. 1, comprised 65 parishes, and a population of 25,988; the number of cases was 550, constantly sick 20 The Bethnal Green Union, having three districts, had in 1831—62,018 inhabitants. In St. Martin in the Fields the population was 23,970—1,511 cases were treated; 125 were constantly on the sick list in 1837. The Lambeth Union, divided into 6 districts, with a population of 87,856; produced 16,450 cases in one year, and furnished 313 persons for the constant care of the medical officers.

The evil consequences of imposing such Herculean labours upon individuals who have besides to maintain themselves out of their practice, are as

obvious as those resulting from the enormous extent of the rural districts. The sick poor, if not absolutely in a great number of instances, neglected, are subject to be mal-treated from the haste with which their cases must be disposed of: or the medical officer is driven to evade the performance of his too onerous duties by devolving their discharge upon an unqualified, or upon an ill-qualified assistant; or upon apprentices, for whom the parish affords fair practice. As for the poor, no body cares about them; and Sir Astley Cooper's triple remedy—the *ordeal* of the Hall *passed*, the *diploma* of the College *possessed*, and an *examination* before a Midwifery Board *undergone*, will fail to protect them from the boys and young men who dispense the medicines of the rich, and prescribe for the diseases of the poor in a vast multitude of instances. Frightful would be the result displayed, were the comparative mortality ascertained, in districts attended by the medical officer himself, and in those where he only exercises a general supervision over the attendance of his apprentices.

Let us proceed with the invaluable testimony of Mr. Farr; and ascertain the remuneration doled out to the labourers in fields so crowded and so extensive.

"The payment is generally per case, or by salary, or on the pauper schedule. The salaries vary exceedingly in different districts without any apparent cause." p. 105.

In Devonshire, for example, "in the Credition Union, district 1, the payment per case is 3s.; in the 2d district of that Union, the payment per case is 1s. 9d.; if the number of cases exceed 88, 1s. 6d.; in the 3rd district it is 1s. 9d. per case also, and 1s. 6d. if the number of cases exceed 172; in the 4th district the payment per case appears to be 6s.; the difference in the area of the two districts does not account for that difference, for the area of district 3, is 16 square miles, and the area of district 4 is 21 square miles. In district 5, the payment per case is 5s., and if the number of cases exceeds 98,—4s. In district 6—6s, and above a certain number, 8s. In district 7—6s., and for all above 98—5s."

In districts 1, 5, and 8, 9 of the Kingsbridge Union, the payments are 10s. and 8s. with a fixed maximum however. In the Tiverton Union, workhouse cases are 3s. Town cases 2s. Parish cases (without the gates) 5s. Halberton 5s; Uffculm 4s.; but if the number exceeds 160—3s.; Cullompton, 3s.; if the number exceeds 226—2s. 6d.—in the workhouse, 2s. 6d.; in Bradninch 3s., and 2s. 6d. if the number exceeds 134. In the Bampton, while under 270—5s.; in the Silverton 5s.; in the Thorverton 5s.; in the Washfield 6s.; in the Cleyhanger 5s. "The payment per case in Devonshire ranges from 1s. 6d. which is of course much too low, to 8s. and 10s. per case, but in nearly all those districts a maximum is fixed."

We are glad to coincide with Mr. Farr, that the payment per case system is radically bad; it is bad for the poor, it is bad for the practitioner.

The unwillingness of the relieving officers to grant orders under this system, and the calamitous consequences of such unwillingness are notorious. "In Devonshire, half the pauper population of the county appears to be attended on the per case system; in the other half of Devonshire the medical officers are paid by fixed salaries; the annual proportion of the cases to a population of 1000 in Unions where surgeons are paid by salary, is 68.

There are 68 cases out of a population of 1000 treated by the parochial surgeon; in the districts where the surgeons are paid per case the proportion is about 50, or rather under 50. *The mortality among the latter cases is much higher; the mortality among the cases attended per case is* 59 *per* 1000; *among the others only* 52 *per* 1000; 332 *deaths occurred in Devonshire among* 5587 *cases treated on the per case system; if the mortality had been the same as among the other cases, only* 292 *deaths would have occurred!* or 40 less than the actual number of deaths recorded."

So far the unwillingness of relieving officers to grant orders may be said to be demonstrated by Mr. Farr's figures Had that gentleman possessed experience of the working of the system, even where the payment is by fixed salary, he would have been able to add that orders are multiplied to a medical officer in the inverse ratio of that functionary's attention to his duty and care of the poor.

If the medical officer leaves his pauper practice to apprentices and servants—the paupers die, it is true, in greater numbers; but then the parish is not burthened but rather relieved. If the medical officer sees his own sick, he finds they need wine and nutritious diet—he wishes their recovery—he recommends more liberal supplies of medical comforts than his more careless colleague—he loses fewer patients, but then the parish is more heavily taxed. Of what value is the poor man's health or life, weighed in the balance with the rich man's pockets.

Mr. Ceely need not have apologized for introducing the following quotation from Lord Bathurst—which is literally applicable to the case before us, and which, therefore, literally, and without apology, we apply to it in this place. Corporate bodies, have, indeed. no souls! "All corporations of men," observes Lord Bathurst, writing to Swift, "are perpetually doing injustice to individuals. I have often reflected (from what causes it arises I know not) that though the majority of a society are honest men, and would act separately with some humanity, and according to the rules of morality, yet, conjunctively, they are hard-hearted determined villains!"

We should be well content to transfer the whole of Mr. Farr's upright, manly, noble testimony to our own pages, and consent most grudgingly to let any of our readers go, with only part of it—but time and the printer both forbid.

According to Mr. Farr, and according to universal common sense, good medicines and good medical advice are more economical than bad medicines and bad advice. According to him, and according to common humanity, medical relief "cannot lead to the same abuse as relief in aid of wages, or as relief afforded when the labourer is out of work; no one will break his leg willingly, or take physic as an amusement; medical relief has no tendency to increase sickness or the demand for relief that cannot be refused. No ONE WITH A HUMAN HEART CAN DENY RELIEF TO THE SICK: MEDICAL MEN CANNOT."—*Minutes of Evidence*, p 107.

"No one with a human heart can deny relief to the sick; medical men cannot." That may be, but sad experience has proved that Commissioners and their Assistants, Boards of Guardians, and their Relieving Officers, CAN. As Lord Bathurst says, "CORPORATE BODIES HAVE NO SOULS."

It would, however, be unfair, not to add that Mr. Farr admits having had every facility given him in consulting the returns at Somerset House, and

whenever he called upon Mr. Chadwick, the most ready access afforded him to those returns. Lux ex non ——; Spes ex non: let us look for the dawning of a better day, but let us also be up and doing, lest, if it be thought that we have again retired to our dormitories, while we sleep the plunder of the profession, and the mal-treatment of the poor, continue as before.

The last of the band of worthies who have helped to throw light upon the one evil of poverty to which the present article is devoted, and its remedies —namely—sickness—and medical relief, is:—

12. HENRY WYLDBORE RUMSEY, Esq.—Who is also the author of one of the works which it was proposed to bring under review in this article. An analysis of his evidence will serve for a review of his pamphlet, which we recommend to every one who may be interested in the struggle between the rich and the poor, who help to pay all rates, without the name of paying any.

The details, with respect to extent of district—amount of labour exacted—and amount of remunerations assigned, correspond with those already given in our examination of the other parliamentary witnesses. He however, adds to those details, a very instructive table of the reduction in the number of medical officers in 12 Unions: "In the Aylesbury, from 16 to 3; in the Banbury from 14 to 3: in the Cookham Union, from 8 to 2; in one district of the Eton Union, from 4 to 1; in the Faversham, from several to 1; in the Newbury, from 12 to 1; in the Ongar, from 10 to 4; in the Shipston-on-Stour, from 10 to 2; in the Stow, from 8 to 3; in the Tonbridge, from 5 to 1; in one of the districts of the Windsor Union, from 4 to 1; in one district of the Witney Union, from 8 to 2; in the Woodbridge Union, from 10 to 4; *making a total of* 109 *reduced to* 27*; that is a deficiency of* 82 *medical officers out of* 109*!* "—*Minutes of Evidence*, pp. 28—9.

He also gives the lie to that "Report" which we have exposed already. Mr. Rumsey not only disputes the wisdom of the Commissioners' "better system," and denies their conclusions, he also contradicts their facts.

We have now closed our notice of the evidence taken before a Select Committee of the House of Commons. That evidence convinced the Committee—that the medical districts were too large—and the labours of the medical officers too onerous—that the system of contract by tender is not to be endured, and that the present average rate of remuneration, say 3s. 3d. per case, should be doubled.

Some of the recommendations of the witnesses, though not adopted by the Committee, are worthy to be reconsidered by any future Committee. These are—the deposit of a medicine chest, in every parish, where parishes are small and scattered, and many of them come to be included in a medical district—the appointment of a Medical Commissioner, and of Medical Assessors, for the better supervision and more effectual control of the medical department. Mr. Rumsey proposes that the election of the medical officer should be transferred from the Guardians to the practitioners at large, that, in fact, the medical officers should be elected as the Guardians themselves are elected.

We come now to consider Mr. Serjeant Talfourd's letter to Mr. Rumsey—and the proposed improvements which he is to bring before Parliament in the session 1839-40.

One of his propositions relates to the qualifications—another to the districts—and another to the remuneration of medical men. The two latter are easily settled, justice and mercy being the bases of the settlement. The former, he proposes, should consist of a College Diploma—and when the practitioner dispenses his own medicines, a Hall licence. This ought to conciliate Hall and College, and guarantees a fair qualification of ability.

The subject of medical relief for the sick poor has occupied our own thoughts for some years past. We have made extensive researches into the mode of administering it not only in this country, but also on the Continent, and have come to the conclusion that the present and all former modes among ourselves, is defective in principle, and vicious in practice.

This is not, however, the place for endeavouring to sketch a new and a very different, system from that which has been hitherto adopted. At a future time, or in another place, we shall, probably, develope the views which we entertain, and which our crippled space prevents us from entering on at present.

In relation to medicine and the sick pauper, the Poor Law Amendment Act has hitherto proved a Pandora-box, from which evil after evil has come forth; who knows but that even from this fons malorum there may yet issue good at the last?

One word more. The poor are said by many to be sadly wanting in gratitude,—as though the poor were differently constituted from other men. Now we have not only always found with Boerhaave that the poor were our best patients because God was their pay master—we have also found that the poor were more content with few attentions and a little kindness than the rich with much attendance and many good offices, and more grateful for ease and health than their wealthier neighbours. And we would need no better proof of a medical officer's having neglected or performed his duty, than his own appreciation of the spirit of gratitude evinced by his pauper patients. Uniting our experience with Mr. Ceely, we adopt his language and say:—"We have found them very far from insensible to the advantages of a kind and close attention in cases of sickness—indeed the greatest satisfaction we have ever had in the performance of our duty has been with the poor, from the manner in which they received it, they appeared to appreciate it: nor, indeed, do we ever find so much gratitude evinced by any class of society as by the poor.

What a man sows that shall he reap. If the seed be charity, the wreath gathered will be gratitude.

TEA: ITS EFFECTS, MEDICINAL AND MORAL. By *G. G. Sigmond*, M.D. 8vo. pp. 144. Longman, 1839.

THE opening pages of this elegantly written volume alarmed us a little, lest its accomplished author had been bitten by the TEATOTALO-MANIA of the present day.

"Individually and nationally, we are deeply indebted to the tea-plant." "A curious, and not an uninstructive, work might be written upon the singular benefits which have accrued to this country from the preference we have given to the beverage obtained from the tea-plant, above all those that might be derived from the rich treasures of the vegetable kingdom. It would prove that our national importance has been intimately connected with it, and that much of our present greatness, and even the happiness of our social system, springs from this unsuspected source. It would show us that our mighty empire in the East, that our maritime superiority, and that our progressive advancement in the arts and the sciences have materially depended upon it." 3.

We soon discovered, however, that Dr. Sigmond had too much good sense, and too much professional discrimination to be led into this monstrous extreme. Do these tee-totallers imagine that the vine was spread over the most delightful countries in the world by the hand of a beneficent Creator, for no other purpose but to allow its delicious fruit to fall to the earth and rot? Wine is to many constitutions, not only a luxury but a necessary preservative against many diseases which, were it not for the moderate use of this beverage, would assail the body. If they cry out against the pleasant sensations produced by wine, do they mean to say that equally pleasant sensations are not excited by their tea? O, but they tell us, wine produces bad effects in the end. So it does, if taken immoderately:—and so does tea, if taken in excess. Physicians of no mean eminence, even in our own time, (for instance the late Dr. Trotter) have deplored in terms as eloquent as those of Dr. Sigmond, the degeneracy which was rapidly spreading over the present and rising generation, in consequence of the pernicious habits of tea-drinking! The amiable Archdeacon of Bombay has given way to the following Bombay—or rather bombastic absurdity, in his anathema against wine.

"Bacchus, astride of the spirit cask, is the very evil genius of desolation and wretchedness, poverty, disease, and crime; and to have anything to do with his horrid cask, to buy any of it, or to sell any of it, or in any way to lend the respectability of our name in the consumption of it, is downright insanity." 6.

Now if the worthy priest had been seized with the horrible spasms of cholera, while he was inditing the foregoing passage, would he have refused a good dose of laudanum because the menstruum came originally from the cask of Bacchus? Not he.

The sentiments of Dr. Sigmond are very different.

"That dram-drinking is the pernicious source of poverty and sorrow there can be no doubt; but the question may be fairly asked, and duly considered, whether the glass of generous wine, or strengthening beer, is to be totally abandoned, without an examination of the circumstances which may render a moderate enjoyment either prudent or necessary? Must man rush from one extreme to the other? Do not temperature, climate, age, demand some investigation before the denunciation of all fermented liquors be countenanced; and will not even the lover of tea acknowledge his susceptibility of the pleasure and of the utility of his favourite beverage to be heightened by a moderate indulgence in Nature's other gifts?" 5.

Upwards of one hundred pages of the volume before us, are occupied with the history, botanical, agricultural, and commercial, of the tea-plant, written in an elegant style, and pregnant with various and useful information. All this we must pass over, in order that we may be able to spare a

few pages to that portion of the work which comes more immediately home to our professional avocations and reflections.

After some judicious remarks on diet, and on the necessity for varying it according to the constitution, habits, and avocations of the individual, he comes to the subject of drink, and more especially of tea. He properly observes that, although water is the great beverage of animals and the support of vegetables, it will not suit all constitutions alone. In many countries, districts, and cities, the water is actually bad and unwholesome, not only from mineral, but from animal, or vegetable impregnations. In hot climates the thirst is great; and water alone will not do for all, or even a majority of Europeans transplanted there.

"In almost all warm climates, those who have previously lived in more temperate regions, constantly sip or drink large draughts; but if the first of these habits be acquired, and a bland, slightly bitter fluid, such as tea, be employed, health will be promoted, and the comfort that it produces will become apparent." 137.

In such cases the beverage of tea or rice-water is preferable to the porter-cup or brandy-shrub. In hot weather, in this country, Dr. S. thinks that tea would be preferable to ice, so commonly had recourse to, for quenching thirst. The following quotation will show that our author is not yet a disciple of the teatotalo-mania.

"It has been believed, in consequence of some observations made by Mr. Abernethy, that during eating there should be no drinking: and certainly this rule, in some of the diseases of the digestive organs, is important; but it is not to be applied to a state of health. A due admixture of fluid and solid matter is absolutely necessary for healthy action; not large and copious draughts of any fluid whatever, but sufficient to stimulate the salivary glands into their proper secretion, and also enough to propel the already digested mass from the stomach. A gentle stimulus of three or four glasses of wine during the great meal of the day, is the common habit of life of those engaged in occupations which do not demand any very extraordinary exertions, either of body or of mind; and the general state of health, and the longevity of those who do not trespass further upon the limits of moderation, are evident proofs of the propriety of such a system; after the meal, when some little time has elapsed, two or three glasses of Port produce no ill effects. Some individuals only take their wine after the dinner; but this is by no means so serviceable; for the stomach becomes suddenly stimulated, its action is hurried, and the slow and gradual development of heat is exchanged for a sudden excitement, which leaves a greater degree of collapse behind. About two hours after this a diluent may be advantageously taken; then it is that tea imparts a grateful glow of warmth, assists the stomach to unload itself from the digested food, which it gently propels; soon after it has been taken, the languor which is usually attendant upon a full meal disappears, the propensity to slumber so apt to prevail is dissipated, the body feels light, and the mind capable of either gathering fresh information, or of indulging in the recreation which society affords." 109.

Dr. Sigmond condemns the use of strong coffee after dinner, which we have copied from the French. Our strong wines do not require the stimulus of coffee.

"Excitement follows upon its use; watchfulness of a long duration, and a feverish re-action, are amongst its immediate results: its distant ones act upon the extreme capillary vessels of the body, which it seems to constringe, affecting the skin, giving it a peculiar hardness, and it has been affirmed to impart its

colour ; the sallowness of the skins of the Parisians has been, by more than one medical author, ascribed to it. Many authors have affirmed that paralytic affections, and general debility, follow its use. After dinner, in the form of very strong infusion, the *café noir* is often taken without sugar, sugar-candy, cream, or milk, and is almost an essence of the berry. The individuals to whom it is useful, are those whose breathing is performed with difficulty ; they find the greatest relief from drinking strong coffee, and many escape the midnight paroxysm of asthma, by taking their cup about four hours before the usual hour of retiring to rest." 110.

Where individuals can make a good substantial breakfast, tea is better than coffee—and *vice versa*. Tea, without a sufficient quantity of aliment, is apt to influence the nervous system—but so, in fact, is coffee. Cocoa or chocolate is preferable to either, where sufficient bread cannot be taken—the following advice is good.

" Nothing can be more injurious than the habit of taking spirits at breakfast in tea ; and this is a very seductive custom, which is followed by persons who complain, that two or three hours after breakfast they feel, without their dram, an uncomfortable sinking at the stomach, a general depression, sometimes palpitation of the heart, and a sense of languor and incapability of moving the limbs, which renders them quite incapable of pursuing their daily avocations." 111.

The rum and milk before getting out of bed is just as bad, though it is recommended by some of the magnates of the profession—whether from personal predilection or general experience, is best known to themselves.

" Tea is more particularly adapted for the ordinary beverage of young women ; and the individual who, until the day of her marriage, has never tasted wine, or any fermented liquor, is the one who is most likely to preserve her own health, and to fulfil the great end of her existence, the handing down to posterity a strong and well organised offspring, capable of adding to the improvement and to the welfare of the community." 117.

The following picture of the poisonous effects of green tea on some constitutions, is probably not overcharged—but the more usual effect of this beverage on nervous persons is utter sleeplessness.

" The ordinary effect of green tea taken late at night is incubus or night-mare in its most formidable shape ; and many persons, who after a hearty dinner have taken green tea, wake in the midst of the night in a state of the most fearful agitation and excitement ; the head is oppressed, a sensation of approaching death is felt, or sometimes the person seems to be dragged from the lowest abyss of darkness back to the world, from which during his paroxysm he had felt gradually to sink. Although none of these symptoms are permanent, and after they have passed away they are forgotten, yet a frequent recurrence of them must lay the foundation of mischief, and ultimately tend to the shortening the duration of life. Many individuals, who have to undergo fatigue, drink quantities of green tea as an antisoporific ; certainly it has much power in this way ; indeed, it has been successfully employed as an auxiliary to resist the narcotic effects of opium, when it has been too largely taken ; but, as the action is that of a sedative upon the heart and arteries, it is injurious, and coffee is much to be preferred, which produces arterial excitement, and thus influences the brain and nervous system, even to the production of exhilaration, which is rarely, if ever, the consequence of the employment of tea." 128.

We must conclude our extracts with the following, which we recommend

to the teatotallers, as coming from a physician who is an enthusiastic admirer of tea.

"The vicissitudes of human existence, sometimes in a state of the utmost simplicity, at others of unbounded luxury, demand that aliment suitable to the general wants, as well as to each individual member, should be obtained; that fermented liquors, if injudiciously taken, produce diseased stomachs and livers, consumption, dropsy, madness, is universally acknowledged; and the prudent man, who fears that he may be betrayed into a single excess that may overpower his reason, is perfectly right in shunning the means of mischief. But good wine is a good cordial, a fine stomachic, and taken at its proper season invigorates mind and body, and gives life an additional charm. There can be found no substitutes for the fermented liquors, that can enable man to sustain the mental and bodily labour which the artificial habits of society so constantly demand. Temperance and moderation are virtues essential to our happiness, but a total abstinence from the enjoyments which the bounteous hand of Nature has provided, is as unwise as it is ungrateful. If, on the one hand, disease and sorrow attend the abuse of alcoholic liquors, innocent gaiety, additional strength and power of mind and an increased capability of encountering the ever-varying agitation of life, are amongst the many good results which spring from a well regulated diet, in which the alcoholic preparations bear their just proportion and adaptation." 131.

From these specimens, selected from only one portion of the work, our readers will be induced to peruse the whole.

ELEMENTS OF THE PRACTICE OF MEDICINE. By *Richard Bright*, M. D. and *Thomas Addison*, M. D. Physicians to Guy's Hospital, and Lecturers on the Practice of Medicine. Vol. I. London, 1839, pp. 613.

"THE authors of the present publication, while engaged in their duties as teachers of the practice of medicine, have frequently felt the want of a work at once elementary and practical to which they might refer their pupils as a companion and assistant during the period of their studies. It is with a view of supplying to themselves such a book of reference, that they undertake to add another to the many elementary works which are already before the public."—*Preface, p.* v.

The volume before us being chiefly intended for the gentlemen composing the practice of physic class at St. Thomas's, whereas our Review is designed to circulate through all classes of the profession, we should be excused for not giving more than a cursory notice of a work confessedly elementary, and confessedly, too, only one of "many elementary works already before the public," and already reviewed in our pages, were it not the fact, that while, nominally, only elementary, it is, in reality, much more.

The present volume is confined to the subject of fever and the phlegmasiæ, and, although, upon the publication of the first fasciculus, the authors proposed to abstain from theoretical discussions, they saw fit, in the second part, to allow even these their place—and thus, instead of a student's companion, of use in the class-room, and in the clinical ward—a lamp for his

path, and a lanthorn for his feet, as all elementary works ought to be—we find ourselves called to travel over again. though certainly at improved railway speed, the old roads of long-exploded and universally-rejected theories, the name with which the vague hypothesis of conjectural and imaginative, but unthinking minds are too frequently dignified.

From men so eminently practical as Drs. Bright and Addison are known to be, we shall only be expected to select what they themselves call "sound doctrines and wholesome practice."

One-fourth part of the whole volume is occupied with the subject of (A) FEVER; which our authors treat under the separate heads of Idiopathic, Intermittent, Remittent, Infantile Remittent, and Continued Fevers. This division, it will be seen, completely excludes the synocha or inflammatory fever of Cullen from the list of idiopathic fevers, which, on account of its "extremely rare occurrence, unconnected with some local inflammation or catarrhal affection," is referred to inflammation or catarrh.

Idiopathic Fever.

With the symptoms and divisions of idiopathic fever our readers are familiar. The only exciting causes mentioned by the authors of the present volume are marsh miasmata and contagion. The former is undoubtedly a principal cause.

I. Intermitting Fever.

We select a couple of passages on, first:—

Complicated Ague.—"By complicated ague is meant, an ague, to the ordinary phenomena of which, is superadded some unusual local affection, being most commonly seated in the abdomen, in the chest, or within the head. The abdominal complication is most frequent, and in this country is most prevalent during Summer and Autumn. It may not amount to more than that sickness at stomach, and moderate degree of purging, to which many persons in ordinary health are subject at these periods of the year, depending upon the presence of vitiated secretions, especially from the liver. In other instances, however, we have more decided indications of actual inflammation, affecting either the mucous lining of the alimentary canal, the liver, or the spleen, as shown by the presence of the usual symptoms of these respective diseases."

"Thoracic Affections are most prevalent in Winter and Spring. They are usually of an inflammatory character, and present the ordinary signs of bronchitis, of pleurisy, or of pneumonia.

With respect to the head, the symptoms of irritation or of inflammation of the brain, or its membranes, have not unfrequently been observed to supervene in the progress of an ague, the patient being affected with violent headache, delirium, stupor, coma, convulsions, or rigid spasm."

And 2ndly, on—

Irregular Ague.—Ague "sometimes changes its type, the quotidian becoming a tertian, and the latter passing into a quartan, or *vice versâ*. In other instances, the disease maintains no determined type whatever, but is constantly varying, when it is said to be erratic. In some cases, the cold stage has been altogether wanting, in others there has been no hot stage, whilst in others there have been

a cold and a hot, but no sweating stage. Occasionally the disease is very imperfectly developed, so that the patient only experiences frequent but irregular chills, and a general feeling of indisposition; this is vulgarly expressed by saying that such a person does not shake out, or that he is affected with the *dumb* or *dead* ague. It has also been observed, that the consequences of exposure to miasmata may stimulate, or at least impart a periodic character to other diseases, such as neuralgia, headache, or even some forms of actual inflammation."—37, 38.

Passing over the Predisposing and Exciting Causes of Ague; and the Diagnosis and Prognosis of the Disease, when it occurs; we hasten to examine the mode of treatment recommended.

Change of place—emetics—opium in large doses—and the application of tourniquets, to anticipate the expected paroxysm, and break the habit of recurrence so characteristic in all the forms of regular ague, are the means enjoined for the general treatment of disease. In the cold stage, when the paroxysm has begun, an emetic at the very commencement, or an opiate at any period of its progress, will be found of advantage: and so will the tepid bath; bottles of hot water applied to the feet and stomach; and the free use of warm dilutents, or even vinous drinks. In the hot stages, the temperature should be diminished; the clothing of the bed and body lessened; cool, acidulated, and saline drinks, substituted for the warm and stimulating potions which were called for in the previous stage; and opium administered, unless contra-indicated by obvious congestion or inflammation. Of venesection, diaphoretics, and purgatives, our authors speak slightingly. While of another favourite remedy this is all the mention. "Some have recommended cold sponging either with water or vinegar and water, and others the tepid or cold effusion." Cæsar himself, as Cassius marked him when the fit was on him, could not have expressed himself more chillingly. In the sweating stage, tepid dilutent drinks are all that is needed, common sense dictating the avoidance of every thing calculated to impede the perspiration. The indication during the period of intermission, is, to cure the disease by preventing the recurrence of the paroxysm. This may be effected either by cinchona or arsenic. The former, given in divided doses of the sulphate of quinine, during the entire intermission; the latter, in combination with laudanum, in doses of from four to six minims of the liq. arsenicalis, three or four times a day, and this will be assisted by the infusion of cascarilla, which forms as convenient a vehicle as any for its administration. "The treatment of irregular, is the same as that of regular ague." In the complicated variety, the complication indicates what modification is necessary in the treatment.

II. REMITTENT FEVER.

This class of fevers is closely allied to the intermittent, having the same origin and in many respects the same phenomena; and requiring analogous treament; its most marked difference being clearly pointed out by its name. The paroxysms are less marked, the interval between them witnessing no intermission of symptoms, but only, and that not always, a decided remission. In malignant cases it corresponds so closely to typhus or continued fever, as to be with difficulty only distinguished from it.

"When, in a common continued fever, the mucous membrane of the ilium is considerably involved, that disease often puts on a good deal of a remittent, or rather an irregularly hectic form; the patient experiencing frequent exacerbations and remissions, not perhaps preceded by chilliness or succeeded by much sweating, yet sufficiently well marked." 55, 56.

"The indications" of treatment "are, first, to subdue or remove that general febrile excitement which prevents the intermission, and thereby converts into a remittent what would otherwise prove an intermittent; and, secondly, to complete the cure, according to the same principles as apply to intermittents."

The first of these indications is to be fulfilled by active purgation at the commencement, or, when the disease at its commencement is accompanied with purging, by mild laxatives to evacuate the contents of the bowels, combined with opiates to allay the irritation of the intestinal canal;—by blood letting, general—to subdue the violence of the general fever—and topical, where there are symptoms of local congestion or inflammation;—by saline diaphoretics; an antiphlogistic regimen; and mucilaginous drinks.

In pursuance of the second indication, the sulphate of quinine, or, perhaps, the arsenical solution, may be had recourse to. Upon the use of the former in aged persons, there is a practical observation of great value, which we give in the words of the authors.

"When the disease occurs in old people, and in those of impaired constitution, it will very often not only be safe but necessary to have recourse to it as soon as we have succeeded to some extent in subduing the general excitement, and in relieving individual organs, notwithstanding the continuance of symptoms which in a common continued fever are regarded as contra indicating its use. Under the circumstances mentioned, a moderate heat of skin and frequency of pulse, some degree of headache, and a foul, loaded, or even dry and brown tongue, ought rather to encourage than deter us from the cautious exhibition of the drug; all these symptoms frequently being observed speedily to subside under its use, and thereby furnishing a sufficient evidence of the pathological difference between a marsh and a common continued fever, how much soever they may correspond in their external aspect." 61, 62.

III. INFANTILE REMITTENT FEVER.

The description of this disease, as it occurs in children of from one to eight or ten years of age, is highly graphic. As one of the best portions of the volume before us, we have the less hesitation in transcribing it entire; our own experience helping us to verify it in all its parts.

"When a child of from one to eight or ten years of age has a pale, muddy, and dejected or anxious countenance; a foul tongue; a tumid belly; an irregular appetite, and a morbid state of the bowels; when it picks its nose, and is fretful and restless when awake, and whines, moans, or starts in its sleep, that child is vulgarly said to be suffering from *worms*. If, together with the above symptoms, the child experience occasional accessions of febrile excitement, it is in like manner said to be the subject of *worm-fever*.

These terms, familiar to the unprofessional public, have, as usual, their foundation in correct observation, the diseased conditions alluded to being uniformly associated with derangement of the primæ viæ, and not unfrequently with worms. By the profession, the accompanying fever has been designated *gastric*, or more commonly infantile remittent fever.

With or without fever, the disease is one of extremely frequent occurrence,

and moreover one of vast importance, in consequence of the powerful influence which greater or less degrees of it have in modifying, or in actually inducing, a very large proportion of the disorders incident to early life.

The drooping and listlessness of the child, the muddy or pale face, the languid expression, the dark areola around the eyes, and the dilated or unsteady pupil, at once arrest the attention of the observant practitioner, who, on inquiry, is usually informed that the child, without any assignable cause, begin to droop and waste in flesh; that its appetite is impaired, voracious, or capricious; that it occasionally complains of pain in its stomach or head; and that the alvine discharges are offensive and of a dark, pale, green, slate, or clay colour; that the child moans, starts, or grinds its teeth during the night; and that it picks its nose during the day. On examination, the tongue is usually found coated with a white mucus, most considerable towards the base; the belly more or less distended; and the breath nauseous or otherwise offensive.

This state of disease may continue for an indefinite period, with the effect of merely occasioning more or less emaciation and loss of healthy complexion, and may be gradually removed either by the voluntary efforts of the constitution, or by the timely interference of art.

Should these symptoms, however, be disregarded, it very often happens that the child begins to experience irregular exacerbation of febrile excitement, often leading the parents to declare that the child is at one time pale with cold, at another burnt up with fever and parched with thirst.

The febrile exacerbations vary much in their intensity, frequency, and duration. There may be one, two, or even three, in the course of the 24 hours; that in the evening being commonly the most severe.

Each exacerbation is marked by restlessness and impatience of any disturbance; a hot and dry skin; a flush on one or both cheeks, especially in those who have a fair and delicate skin; remarkable drowsiness; some hurry of respiration; feebleness of the voice; a short hacking cough; a frequent pulse; more or less thirst; and picking of the nose, lips, tongue, or some other part of the surface, these symptoms varying both in number and degree in different cases. On the subsidence of the paroxysm, the skin cools and relaxes, but in general without much perspiration; the urine deposits a sediment; universal relief succeeds; and the child is left comparatively free from bodily suffering or mental dejection.

If, however, the disease be allowed to proceed uncontrolled, the exacerbations are liable to become more and more severe, and the remission less distinct; the appetite is entirely lost; the thirst becomes incessant; the tongue gets dry and brown; the lips and teeth covered with a dark sticky mucus; the voice husky or suppressed; the hacking cough more distressing; delirium supervenes; and the debility and emaciation increase, till the patient sinks completely exhausted; or, symptoms of hydrocephalus supervening, coma or convulsions more abruptly close the scene.

"For the convenience of description, the symptoms enumerated may, with some propriety, be divided into three groups or orders: the first, characterizing cases unattended by any febrile exacerbation whatever; the second, cases with moderate but distinct febrile excitement; and the third, cases of great severity, in which the exacerbations are so acute, and the remissions so imperfect, that the disease approaches the character of a continued fever." pp. 62, 3, 4.

The treatment consists in emptying the intestines of every thing irritating; in correcting the vitiated secretions; and in the due regulation of regimen and diet.

After the morbid condition of the intestines has been to a certain extent removed, the occasional use of the warm-bath will materially contribute to produce a state of convalescence; and that state will be still further pro-

moted by the cautious exhibition of mild, bitter tonics, combined with small doses of the carbonate of soda. In some instances, the sulphate of quinine, in others the chalybeates prove very beneficial.

IV. CONTINUED FEVER.

Under this title, as the least ambiguous, Drs. Bright and Addison comprehend every variety of disease described by other authors as synochus, typhus, adynamic fever, nervous fever, ataxic fever, jail fever, malignant fever, spotted fever, putrid and contagious fevers.

They treat of it under its mild, severe, and complicated forms. Under the complicated form we have it combined with predominant cerebral, abdominal, or thoracic affection; each of which varieties is sketched with a masterly hand.

The indications of treatment are two:—

1st. To cut short the disease, if practicable, by a brisk emetic, active purgation, and one free blood-letting at the commencement, followed up by the cold affusion, or, where the attendants revolt from that remedy, by sponging the surface with cold water or vinegar and water, or vinegar and water with the addition of æther; and by the administration of saline diaphoretic medicines.

2nd. Failing to fulfil the first, to conduct the disease to a successful termination; which is to be accomplished by the judicious employment of occasional laxatives, and of different preparations of mercury, according to the peculiarities of special cases; a low diet, antiphlogistic regimen, and acescent drinks; with a diminished temperature and free ventilation.

Should these means fail of fulfilling either indication, and the *mild* run into the *severe* form, depletion and counter-irritation are further indicated, the latter by the constant application of cold to the shaven scalp—assisted by a blister to the nape of the neck, and mercurial purges. If, after all this, the cerebral disturbance and irritation to a considerable extent remain, small and frequent doses of laudanum are recommended—and if, notwithstanding, the powers of life begin to fail, stimulants and tonics end the catalogue of remedies—and only too frequently exhibit the impotence of medicine.

We transcribe another practical caution of value to every practitioner.

"Before proceeding," they say, "to point out the treatment applicable to the more decided inflammatory complications of fever, it must be observed, generally, that although these inflammations are to be treated on common principles, it must never be forgotten that, along with the inflammation, we have to contend with a fever which is at all times of uncertain duration, and which never fails to impair more or less the vital powers of the system; and, consequently, that in adopting depletory measures, we must employ them with extreme caution and with a sparing hand." p. 108.

In the *cerebral complication* which, from the intensity with which the brain is affected, has obtained the name of brain fever, the blood-letting should be not only free in the first instance, but repeated as often as may be necessary, and when doubt exists of the propriety of carrying general blood-letting further, the abstraction of blood from the neck and temples by cup-

ping are suggested. A shaven crown—and cold head are of course indispensable—the last being effected by evaporating lotions, or a descending column of water made to impinge upon it. Free evacuations of the alvine canal; abstinence from slops; with the exclusion of light and the suppression of sounds, are also to be resorted to.

Upon the use of the strait-waistcoat in these cases, we entirely concur with the writers, that it is "a proceeding which ought never to be adopted, provided the safety of the patient and of his attendants can be secured by more gentle means."

In the *Complication with Abdominal Affection*, where vomiting prevails attended by tenderness at the pit of the stomach—general blood-letting must be more sparingly resorted to—the use of mercurials, especially of calomel, is contra-indicated—topical blood-letting by leeches—counter-irritation by poultices, blisters, or, better, because more promptly efficacious, the application of liq. ammon. fortiss. over the region of the stomach; and mild emollient laxatives, are the principal remedies to be depended upon. When diarrhœa is present, as frequently happens, a dose of castor oil, combined with a few drops of laudanum will prove of the greatest service.

Such cases are, generally, protracted; and leave, as their sequel, emaciation, sometimes so deplorable that the bones of the hip and sacrum protrude through the skin, and give rise to foul, sloughing ulcers. Dr. Arnott's water-bed is properly enough recommended where it can be procured; but how few fever patients, comparatively, have any bed at all to lie upon! For these, even the alternative of pillows are scarcely procurable. And in such cases we advise the liberal employment of common lead or soap plaister.

Where the *predominant* is a *thoracic affection*—it may be bronchitis—pneumodia—or pleurisy. And very different treatment being required in these cases, the diagnosis cannot be too careful. We cannot do better here than speak our own thoughts in the words of the volume under review:—"if general blood-letting to any considerable extent be an ambiguous remedy, even in idiopathic bronchitis, it is a practice which requires much more scrupulous caution in fever," (complicated with bronchitis.) "In truth it is rarely admissible; local depletion, by cupping or leeching, or the application of a blister, being much more safe and often sufficiently effective." p. 113.

Where pneumonia supervenes, or pleurisy, the practitioner need have no fear of the lancet, it is his sheet anchor.

In bronchitis—mercury is generally inadmissible—antimony, and the best preparation of it is the tartar emetic of the Pharmacopœia, is *the* remedy to be relied on.

In pneumonia and pleurisy, on the contrary—not antimony, but mercury, is the medicine to be trusted.

With theories, we promised our readers at the commencement of this article, they should not be troubled; and we shall therefore pass by in silence the Authors' Theory of Fever.

We proceed to glance at the contents of the second division of the volume which treats of—

(B.) INFLAMMATION.

After premising a few comments on the ordinary signs of inflammation it proceeds to point out the changes which take place, and the constitutional effects produced by it. The former are—1st. Loss of Cohesion. 2d. Effusion of Serum. 3rd. Effusion of Coagulating Lymph, organizable or coagulable Lymph; inorganizable, or Pus. 4. Arrestment of Organic Function, constituting Gangrene and Sphacelus. The latter are, hectic fever, mortification, ulceration, granulation and cicatrisation; but whether the two last are to be considered as changes at all, appears to us very questionable.

The particular inflammations treated of are, catarrh; influenza; bronchitis; laryngitis; croup; hooping-cough; pneumonia; pneumothorax; pleuritis; phthisis pulmonalis; pericarditis; phrenitis; arachnitis; cerebritis; otitis; cynanche tonsillaris, chronica, pharyngea, membranacea, and parotidea; acute, puerperal, chronic, and latent peritonitis; acute and chronic gastritis; acute and chronic enteritis; inflammation of the cæcum and appendix vermiformis; hepatitis; acute hepatitis, (1st of serous covering, and 2d, of parenchyma); subacute and chronic hepatitis; splenitis, (1st, of serous membrane, 2d, of parenchyma,), nephritis, cystitis, rheumatism and gout.

In noticing the inflammatory affections, as cursorily as our limits require, we shall group them in orders, according to their organic seats; not having space to consider them separately.

1. INFLAMMATIONS OF THE MUCOUS MEMBRANES.

These may be divided into—1st. *Inflammations of the Mucous Membrane lining the Air-passages*, and 2ndly, *Inflammations of the Mucous Membrane lining the Alimentary Canal.* And these again may be subdivided, the first into Catarrh and Influenza, Laryngitis, Croup, Bronchitis, and Hooping-cough, which are all modifications and degrees of one common disease—calling for the same general treatment, only modified by the specific varieties of the disorder; the second, into Cynanche, Gastritis, Enteritis, or Mucoenteritis, and Cystitis.

Catarrh.—"In its most exquisite form, may be said to consist of an inflammatory condition of the mucous membrane of the nose, eyes, frontal sinuses, fauces, trachea, and bronchial tubes; generally attended with pyrexia; for the most part sporadic; but occasionally epidemic, when it receives the name of,"

Influenza:—the chief peculiarities of which are, its almost universality; the abruptness of the attack;—and the rapidity with which it increases in severity.

Laryngitis, is inflammation of the same membrane where it lines the larynx; and

Croup and *Bronchitis* are still inflammations of the same tissue, changed

only in their locality, and every variety of symptom by which they are severally distinguished being produced by the altered circumstances of their respective localities. Whereas, hooping, or whooping cough appears to be an assemblage of all the above, commencing with catarrh, and ending in whoop.

The treatment accordingly, in all these diseases, has certain indications in common, requiring to be fulfilled with more or less energy, according to the seat of the disease and the severity of the symptoms. These indications are, to subdue inflammatory action; allay irritation; mitigate the cough; and facilitate expectoration.

In ordinary catarrh, "little more is required than confinement within doors and abstinence for a few days, together with a liberal use of diluent or cooling drinks to promote perspiration." "Should the febrile symptoms run high, should the constriction of the chest be considerable, and especially if the disease show a tendency to pass into pneumonia or pleurisy, blood-letting may be had recourse to with safety and advantage, to an extent regulated by the severity of the attack, and the constitution of the patient."

Gentle cooling laxatives, and antimonial diaphoretics; with a blister perhaps to the chest where its constriction is painful; and the pediluvium every night; will subdue the violence of the attack, and the irritability consequent upon it will be found to yield very generally to small doses of Dover's powder.

In influenza, blood-letting has never been employed to any great extent, and, indeed, "in some instances it has been found inadmissible, from the great and sudden prostration of strength observed to follow its use."

"As there is perhaps no disease, the treatment of which requires greater caution and circumspection than *Bronchitis*, it would be well for the student to fix firmly in his mind the principles upon which it ought to be conducted. It is true that the disease in all its forms is one of inflammation, and that the activity of the treatment must be to a certain extent regulated by its intensity. *It must however, be borne in mind that it is inflammation of a mucous membrane, over which depleting* measures exert a very partial control; that in spite of every remedy such inflammation will generally continue an indefinite length of time, although in a subdued degree; that the inflammation as long as it lasts, is attended with a morbid secretion which obstructs the bronchi and seriously interferes with the functions of the lungs; and that, in order to free the bronchial tubes from the excessive secretion, the patient has to pass through a longer or shorter period of great exertion, distress, and want of repose. From this it follows, that all remedies calculated greatly to impair the patient's strength, should be employed with the greatest reserve, and that even in the most acute attacks the period of active depletion is likely to be of very short duration." 196.

"As there is some reason for believing that the peculiar inflammatory product which proves so great a source of danger, (in *croup*) results from the kind, rather than from the mere intensity of the inflammation, we ought, in regard to depletion, to be guided more by the degree of febrile excitement present and by the age and constitutional powers of the patient, than by the mere obstruction of the breathing." 212.

"To be successful, the treatment of acute laryngitis must be prompt and active. As the disease is one of inflammation accompanied with a remarkable tendency to spasm about the glottis, our object should be, to subdue the inflammation by antiphlogistic measures; and allay or prevent the spasm by the simultaneous employment of anodynes, and by the local application of warmth and moisture. If there be any very considerable febrile disturbance, the necessity

of general blood-letting is sufficiently apparent; and even if not, should the local affection prove severe, and provided the patient be of good constitution, it ought never to be neglected in the first instance. The patient may be bled to such an extent as to induce a tendency to syncope; immediately after which, two or three grains of calomel, with a grain of opium and a quarter of a grain of tartar emetic, may be given, and repeated every three or four hours, till the constitution becomes affected by it. After general bleeding, 6, 8, 10 or 20 leeches, according to the age of the patient and particular circumstances of the case, may be applied to the external throat, followed either by a large warm poultice, or assiduous sponging with very hot water, &c." 205.

"When consulted very early, even in slight cases, (of *hooping-cough*), it will always be prudent and safe on the part of the practitioner, to adopt antiphlogistic measures, with a view to counteract the tendency to bronchitic and pneumonic inflammation." 220.

Of the other remedies to be employed in these different yet similar diseases, a brief enumeration will suffice:—gentle laxatives rather than drastic purgatives; saline and antimonial diaphoretics; counter-irritants; where considerable irritation is a concomitant, anodynes; and where opiates are inadmissible, camphor and hyoscyamus prove generally efficacious.

As in inflammations of the mucous membrane lining the air-passages, so, in inflammations of the same membrane where it is prolonged over the interior of the alimentary canal, &c. the indications of treatment are:—to subdue inflammation, to allay irritation,—and these will be effected here, as elsewhere, by diminishing the activity of the circulation in the part affected, either by moderate general blood-letting; free topical bleeding; counter-irritants; gentle evacuants rather than active purgatives; diaphoretics, and nauseating ptisans—with the use of the warm-bath, and the cautious administration of anodynes. In acute gastritis, and in acute enteritis, laxative enemata must be had recourse to, and total abstinence from food enjoined. As the former disease subsides, a few grains of carbonate of magnesia, with a few drops of vinum opii, or of the hydrocyanic acid, will allay the irritability of the organ.

In *Enteritis*, "the irritability of the bowels may sometimes be allayed by injecting about three parts of a pint of thin tepid gruel or barley water into the rectum; or still more certainly, by throwing up two or three ozs. of thin starch with fifteen to twenty minims of laudanum, or half an ounce of syrup of poppies." 486.

In *Cystitis*:—"The indications of treatment are, first, to remove if possible the exciting cause, if any exist at the time; secondly, to subdue the inflammation; thirdly, to allay the irritability of the bladder, so as to enable the patient to desist from frequent straining; and lastly, to remove any remaining irritation of the mucous membrane of the urinary passages generally." 557.

II. INFLAMMATIONS OF THE SEROUS MEMBRANES.

The natural division of these is according to the cavities which they form —to wit, the cerebral, the thoracic, the abdominal, and the articular.

The first will embrace phrenitis and arachnitis; the second, pleuritis and pericarditis; and the third, peritonitis, sero-hepatitis, sero-splenitis, and sero-enteritis.

For the descriptions and pathology of these diseases we must again refer to the work itself—our object is to lay before our readers the principles of practice in their treatment.

In *Phrenitis* and *Arachnitis*, the prompter the measures, and the bolder the treatment, the more successful will be the issue; here, delays are indeed dangerous, whatever is done must be done quickly. Bleeding to syncope—repeated—and again repeated. Leeches. Cupping. A blister to the nape of the neck. Ice or evaporating lotions to the scalp, which should be *shaved* in the very first instance; mercurial inunction well rubbed in, and even used as a dressing for the blister; and calomel pushed by small and frequent doses, to affect the constitution and produce ptyalism—are the leading points of practice in a set of diseases which, if we do not nip them in the bud, will speedily kill our patients.

In *Pleuritis* again, "the treatment is extremely simple; the most successful practice consisting in active depletion and a free use of mercury, so as to produce its specific effects upon the system." 274.

In *Pericarditis*:—"The indications are, to put a stop to the inflammation, and to prevent or arrest effusion and consequent adhesion. These objects are to be accomplished by general and local depletion, and by speedily inducing mercurial action on the system." 325.

In *Peritonitis*:—"The chief part of the treatment consists in general and local depletion, and as speedily as possible bringing the system under the influence of mercury." 427.

And so on, in *every* case of an inflamed serous membrane. Attention to these two principles will simplify the study of inflammatory diseases, whether in books, or far better, at the bed side, and very materially simplify their treatment. In inflammatory affections of the serous membranes, mercury is indicated; blood-letting, general and topical, is indispensable. In inflammatory affections of the mucous membranes, general blood-letting and mercury both, are contra-indicated—topical blood-letting is mainly admissible—antimony in some is essential to success.

We come now to notice, in the last place, a third group of inflammatory diseases, viz:—

III. Inflammations of the Parenchyma of Organs.

Under this head are included, cerebritis, pneumonia, phthisis, carditis, hepatitis, splenitis, nephritis, rheumatism and gout.

In *Cerebritis*, the diagnosis is most obscure, and if not made out at the beginning, the error is almost irreparable; the prognosis is most unfavourable, and unless the treatment be most active from the commencement, the case will prove hopeless. Depletion and counter-irritation, are the principal means of subduing the morbid action. The lowest diet and the utmost quiet are indispensable.

In *Pneumonia*, particularly in its truly simple form, the diagnosis is not unattended with difficulty, even to the stethoscopist, "from the absence of those functional signs which he has been taught to regard as characteristic of the least complicated form of the complaint." And to those who are not in the habit of employing the stethoscope the difficulty is increased, from

either the very slight degree in which cough or expectoration is present, or their total absence. Upon one diagnostic symptom our authors must be suffered to speak for themselves, as it were impossible for any others to speak better than they do:—

"Of all the symptoms of pneumonia, the most constant and conclusive in a diagnostic point of view is a pungent heat of the surface; by this symptom alone the first stage of pneumonia may in most instances be readily recognized; by this symptom alone pneumonia has been repeatedly pronounced to exist, before asking a single question, or making the slightest stethoscopic examination of the chest. The presence of this symptom will seldom mislead even in the most complicated forms of inflammation within the chest. It is by no means contended that it is necessarily present at some period of every case, although that is not improbable; but it may be safely affirmed that when inflammation is confined to the chest, however varied may be the tissues involved in the inflammatory process, provided this symptom be present, pneumonia may be confidently pronounced to form a part in nineteen cases out of twenty, and perhaps in a larger proportion. A similar pungent heat of the surface is now and then observed in certain forms of renal dropsy; more frequently in continued fever, especially in children; and still more commonly in the eruptive fevers of the exanthemata and erysipelas; and as such cases may supervene upon already existing disease within the chest, the fact ought to be carefully remembered." 241-2.

"The treatment must be purely and promptly antiphlogistic." Bleeding to syncope, and mercury to ptyalism, are recommended by one class of practitioners; the antimonial or contra-stimulant treatment by another. In proportion as the seat of the disease is accurately defined to be either the substance or the lining membrane of the lungs, the indication will be determinate whether the mercurial or the antimonial should be the treatment employed.

We have no room for entering upon the subject of *Phthisis* here. To do justice to the very valuable practical remarks of the authors, would require nearly the whole of the space allotted to the present article. Although peculiarly an English disease, it has baffled every English practitioner, and even in this our day continues to be mistaken in its incipient, and misconducted in its subsequent stages. Indeed, it is only a few weeks since our attention was called to a case where a practitioner who enjoys to a considerable extent the confidence of the public in his own neighborhood, has mistaken the disease altogether—pronounced the colliquative sweats accompanying it salutary; and actually poured in medicine with a view to encourage them, until the fears of the family were roused by the *originality* of the practice, for other members of it had passed through the disease to their graves—and another practitioner was called in, to behold the victim die.

Of the treatment of phthisis, all that can be said is well said in the present volume.

"Little as we can place confidence in medicine, and impossible as it is to speak of remedies as calculated to cure the advanced disease, it is pleasing to feel persuaded that when our preventive means have failed, or when they have been too long neglected and the disease has apparently begun, we can often retard its progress, and occasionally have reason to believe that a cure has been effected." 307.

In *Hepatitis*, the characteristic feature of inflammation attacking the pa-

renchyma of organs, obscurity, is present to render difficult the diagnosis. The importance of a correct diagnosis in order to a prognosis which time will verify, must have been felt by every practitioner of even moderate experience. The treatment is obvious—it should be depletory, counter-irritant, mercurial, in a word—antiphlogistic; and "should be marked by all the energy which destructive action, set up in one of the most important organs of the body, must necessarily demand."

In *Splenitis*, the diagnosis is almost always obscure, the prognosis generally favourable—the indication of treatment the same as in other diseases of the same order. Antiphlogistic remedies, promptly and freely employed, "and perhaps a somewhat more cautious use of mercurials than in cases of membranous inflammation," will seldom fail to subdue the violence of the attack, and prepare the way for the administration of tonics to sustain the sinking, or restore the diminished strength of body which follows the attack.

Nephritis, "as a purely idiopathic disease, is less frequently met with than most of the other phlegmasiæ, but is of frequent occurrence as an effect of certain acrid substances taken into the stomach, and of calculous matter formed and lodged in the interior of the organ." p. 535.

The well-earned reputation of Dr. Bright, as an accurate and original observer of certain morbid changes in the structure of the kidney, and of certain previously unsuspected connections between diseases of that organ, and an important series of affections, its influence upon which had been previously unsuspected; is amply sustained by the disquisition in the present volume, on inflammation of the above viscus.

The obscurity of its diagnosis; its effect upon the nervous system; and its morbid influence upon the cerebrum itself, are graphically described.

As respects the prognosis, he well remarks that:—

"*The least alarming often proves the most dangerous form of the disorder;* and hence, when it makes its approach insidiously, with little or perhaps no local pain whatever, but with symptoms of oppression of the brain, it is at all times attended with extreme danger, and will, for the most part, be found to prove fatal; and, indeed, whatever may be the form of the complaint, provided the brain become involved, the most serious apprehensions ought at all times to be entertained as to the result; especially if the secretion of urine be not only diminished, but altogether suppressed." p. 546.

The treatment indicated is depletory, and more or less mercurial.

If we were asked to point out the modification called for in the treatment of inflammation when, instead of attacking the membranous tissue, it invades the parenchyma of an organ, we should refer to the tendency which there always is, in the latter case, to a termination in suppuration—as limiting the use both of the lancet and of mercury. And we may say, in conclusion, of the three groups into which we have gathered the inflammations treated of in the present volume:—That—in inflammations of the mucous membranes, the termination is generally in resolution—in those of the serous membranes, in adhesion—in those of the parenchymata, in suppuration. The diagnosis of the three sets of diseases is least difficult in the second, more so in the first—and most of all, in the third. The prognosis is most generally favourable in the first—not so favourable in the second—and still

less so in the third. The practice is most decidedly antiphlogistic and depletory in the second—more exclusively antimonial and anti-stimulant in the first—and in the third partakes of both, without bearing the same amount of either.

We have prolonged this review to such an extent already, as to preclude us from even touching upon Rheumatism and Gout, with the descriptions of which, the present volume concludes.

In bidding its authors a present farewell, we do so with a sincere desire that they will not unnecessarily protract the period which is to elapse before we meet them again in the succeeding portion of their very agreeable work.

That that work will prove a valuable companion, and of real assistance to their numerous pupils, there can be no doubt. That it will prove an acquisition to the library of every practical physician in the land, we likewise believe, or we would not, as we do, heartily recommend it to the attentive perusal of every one of our own readers.

The style in which it is written, without intending a pun upon the names of the writers, is truly chaste and Addisonian—and the practical ideas which that style is employed to convey, are all *bright* and luminous. For ourselves we can only say that we have never tired in its perusal—and rise from its pages with increased respect for its authors.

THE VENEREAL.

THE MODERN TREATMENT OF SYPHILITIC DISEASES, BOTH PRIMARY AND SECONDARY: COMPRISING AN ACCOUNT OF THE NEW REMEDIES, WITH NUMEROUS FORMULÆ FOR THEIR PREPARATION, AND MODE OF ADMINISTRATION. By *Langston Parker*, Member of the Royal College of Surgeons, Fellow of the Royal Medical and Chirurgical Society of London, and Lecturer on Anatomy and Physiology in the Birmingham Royal School of Medicine and Surgery, &c. &c. London, Churchill, 12mo. pp. 158.

ONE would suppose that all the world was poxed, so many works on it does the press teem with, so many lectures on it are the weekly journals infected with. We wish we could say that all the works and all the lectures display much acquaintance with it. We suspect that it is on—

"The value of a thing
Is just what it will bring,"

principle, that syphilis is much in vogue at present. Be that as it may, we must notice these productions as they are produced, and Mr. Parker's happens to lie just now before us.

Mr. Parker informs us in his Preface:—

"The modern researches on Syphilis, its complications and consequences, and the improved modes of practice which have been the result of such investi-

gations in this country, and on the continent, have, as yet, been made known to the public only in detached portions, and that chiefly, if not altogether, through the medium of the periodical medical literature of the day.

Much attention to the subject has impressed me with a conviction, that a work containing the *result* of modern experience, would not be unacceptable to the profession; whilst, to the junior part of it, such a publication might be exceedingly useful.

Usefulness, and not originality, has been the great object I have consulted in composing the present work. It contains little, and I believe no theoretical matter, except perhaps the account of Mons. Ricord's researches 'On Inoculation,' in reference to Syphilis. I originally intended, and to the best of my ability I have carried out my intention, that it should contain only the result of generally received modern experience on the treatment of Syphilitic Diseases.

I have adopted no party in the question; as will be perceived by a perusal of the work, not agreeing exclusively with the mercurialists, on the one hand, or condemning the remedy *in toto* on the other, in accordance with the principles of the physiologic school, or the partisans of the simple treatment. I have endeavoured to hold out to the confidence of the reader those plans of treatment, and those only which are calculated to cure his patient the most speedily and with the greatest safety."

The work is, in point of fact, a compilation, and that mainly from French writers. We must therefore be excused from offering any thing like an analysis of it. We may content ourselves with stating that it consists of sixteen sections, and that they appropriate to themselves the following matters. Section 1, of the simple treatment of syphilitic diseases—of the simple constitutional treatment of syphilis—of the simple, local, or surgical treatment of syphilis—of the mercurial treatment of syphilitic diseases; section 2, of particular preparations of mercury, and their mode of employment—mercurial fumigations, the proto-chloride of mercury, the bichloride of mercury, the proto-ioduret of mercury, the cyanuret of mercury, the deuto-phosphate of mercury—section 3, on inoculation, as applied to the diagnosis, and treatment of syphilitic diseases—section 4, of the first class of syphilitic diseases—gonorrhœa, its varieties and consequences—of balanitis, gonorrhœa, symptoms, sympathies, varieties, consequences and terminations —treatment—of specific remedies—copaiba, particular forms for its exhibition—cubebs, particular forms for its exhibition—of mercury—of injections; section 5, of diseases which succeed to gonorrhœa in the male; section 6, of gonorrhœa in the female—of the second class of primary syphilitic diseases —ulcers, their varieties and consequences; section 7, of chancres of the urethra; section 8, of phagedænic primary venereal sores—the local treatment of phagedæna—of mercury—of the simple treatment of phagedæna —of bubo; section 9, of constitutional or secondary syphilis; section 10, of syphilitic diseases of the skin—of mercury—of the use of iodine and its preparations—sudorifics—the muriate of gold; section 11, of the particular forms of syphilitic diseases of the skin—syphilitic exanthemata, syphilitic squamæ, syphilitic vesiculæ, syphilitic pustulæ, syphilitic papulæ; section 12, of the syphilitic tubercula; section 13, of constitutional syphilitic ulcers—of vegetations; section 14, of the syphilitic testicle—section 15, of pains in the bones; section 16, of periostitis—of ostitis—of the operation for the relief of phimosis.

We shall pick out some formulæ and some facts, both mostly conti-

nental, and endeavour to consult the utile rather than the mirabile in our selection.

1. *Particular Preparations of Mercury.*

The Proto-Ioduret of Mercury.—MM. Cullerier, Biett, and several others, employ the proto-ioduret of mercury in preference to the bichloride, as more certain in its effects and less liable to decomposition. This preparation may be employed in primary syphilitic sores in strumous habits, but is chiefly resorted to in chronic affections and in those varieties of disease which have been described by authors as constitutional syphilis.

M. CULLERIER'S FORM FOR THE EMPLOYMENT OF THE PROTO-IODURET OF MERCURY.

℞. Hydrargyri proto-ioduret, gr. xij.
Ext. v. Pulv. Opii, gr. vj.
Gummi Guaiaci, ʒ j. M. ft. Pil. xxiv.
Capiat I nocte maneque.

POMMADE OF VAL DE GRACE.

℞. Hydrargyri proto-ioduret, ℈ j.
Adipis, ʒ j. M.

Employed in friction upon tumours and indolent buboes after all acute inflammatory symptoms have disappeared.

Mr. Parker goes on to inform us:—

It is principally, says M. Cullerier, in secondary syphilis that the proto-ioduret of mercury is administered with success. Its effects are principally evident in secondary ulceration of the mucous membrane, cutaneous tubercles, exostoses, and chronic affections of the joints, where the other preparations of mercury have had little effect.

The deuto-ioduret of mercury may be employed in friction or in pills, in the same manner as the proto-ioduret: it is stronger and more stimulating, and consequently should be administered in smaller doses. Both these remedies may be advantageously employed in all cases of secondary syphilis, with more certainty and less risk than the deuto-chloride; also in indolent buboes, in obstinate ulcers with hardened base and edges. In all instances they must be guarded by opium, and the patient must be submitted to a strict dietetic and antiphlogistic regimen during their employ. The dose of the deuto-ioduret from 1-16 of a grain to a grain.

We would observe that recommendations to employ these mercurial preparations in what are called "secondary symptoms" must be carefully scrutinised and cautiously acted on. Four-fifths of "inveterate secondary symptoms" are not secondary symptoms at all. They are cachectic symptoms mostly due to mercury, and aggravated by its further use. And the advice to keep patients on antiphlogistic regimen during the exhibition of medicines of this class is to be received cum grano salis. As a general rule low living and depletory treatment do not answer during a course of mercury. Salivation is more likely to occur, the health is more liable to suffer, and cachectic symptoms more apt to be developed or increased. Certainly

it is not in the *treatment* of disease, be it what it may, that we would take Continental practitioners as guides.

The Cyanuret of Mercury.—The following account and formulæ are given us by Mr. Parker.

The cyanuret of mercury is now frequently employed in preference to the bichloride, and for the following reasons. It is more soluble and not so liable to decomposition, acts more quickly, and does not occasion those pains in the stomach and bowels that so frequently accompany the prolonged administration of the bichloride. According to the researches of M. Parent, the cyanuret of mercury is not decomposed by either acids or alkalies, nor by decoctions containing azotised principles or gallic acid.

The cyanuret of mercury may be administered internally in pills, or in solution, and used externally in form of pommade or ointment. M. Cullerier employs the cyanuret in primary syphilis. Externally it is an extremely useful application to various forms of herpes, particularly that form termed by Alibert, "herpes squamosus," the violent itching and irritation of which it allays. It may be employed externally also as a dressing to indolent syphilitic ulcers, and scirrhous tubercles, or as a gargle in ulcerations of the throat. The dose of the cyanuret is from 1-16 of a grain to a grain.

GARGLE OF THE CYANURET OF MERCURY.

℞. Hydrargyri Cyanuret. gr. x.
Infus. Lini. Comp., ℔ j. M.

PILLS OF THE CYANURET OF MERCURY.

℞. Hydrargyri Cyanuret., gr. viij.
Pulv. Opii, gr. xvj.
Ext. Guaiaci, ʒ ij. M. ft. Pil. lxiv. Capt. 1 ter die.

OINTMENT OF THE CYANURET OF MERCURY.

℞. Hydrargyri Cyanuret, gr. xij.
Adipis, ʒ j. M. ft. Unguentum.

SOLUTION OF THE CYANURET OF MERCURY.

℞. Hydrarg. Cyanuret, gr. vj. ad gr. x.
Aquæ, ℔ j. M.

Half an ounce for a dose, administered in a mucilaginous vehicle or with the addition of sugar in form of syrup.

M. PARENT'S CYANURETTED PILLS.

℞. Hydrargyri Cyanuret. gr. xxiv.
Ammoniæ Muriatis, ʒiij.
Guaiaci Gummi, ʒiij.
Ext. Aconiti, ʒiij.
Ol. Anisi, ♏. xxiv. M. Mucilagini, q. s. ft. Pil. 400.

One or two twice or three times a day, the dose gradually increased. Each pill contains about 1-16 of a grain of the cyanuret. These pills are a substitute for the bichloride of mercury in many forms of secondary syphilis.

ANOTHER FORM OF M. PARENT.

℞. Hydrarg. Cyanuret., gr. vj.
Opii, gr. xij.
Micæ panis, q. s. ft. Pil. xcvj.

Each pill contains 1-16 of a grain of the cyanuret adapted to forms of primary syphilis. The dose of one or two pills twice a day in the commencement, and gradually increased.

Deuto-Phosphate of Mercury.—The deuto-phosphate of mercury is employed in Italy, more particularly at Naples, in the treatment of venereal affections in preference to the other salts of this metal. It may be given internally in pills or in solution in the same doses as the bichloride. Employed by friction upon indolent buboes or exostoses, is said to be preferable to all other forms of the remedy, It is of use also as a dressing to indolent chancres.

OINTMENT OF THE DEUTO-PHOSPHATE OF MERCURY.

℞. Hydrargyri deuto-phosphatis, gr. viij.
Adipis, ʒj. M. ft. Unguent.

In cases of indolent bubo, a few grains are rubbed daily upon the tumour, the frictions also are to be made upon the groin of the opposite side. Our experience in the use of this remedy is drawn chiefly from the practice of Fiore and the Neapolitan surgeons, it is scarcely used in France, although occasionally employed in Germany.

We shall here introduce some of the remedies employed for secondary symptoms.

Iodine and its Preparations.—" These remedies are employed largely in the treatment of the secondary and tertiary symptoms of constitutional syphilis. Iodine of itself is a powerful antisyphilitic, but unless in a state of combination with mercury, is inadmissible in the treatment of the simple primary forms of disease. It may be employed in the cutaneous diseases of constitutional syphilis with great advantage, and, though a remedy not so active as mercury, is particularly indicated in constitutional syphilis, where the primary forms of disease have been treated by full courses of the former medicine. Cullerier uses the following form for its administration.

℞. Iodinii, gr. j.
Potassæ Iodid. gr. ij. ad iv.
Aquæ, ʒj. M.

This may be put into a pint or quart of any vehicle ; as the decoction of sarsaparilla, &c. and given at intervals during the day. The dose of the iodine may be increased to two grains in the day, and that of the iodide of potass to six, or ten. The preparations of iodine are chiefly of use in constitutional syphilis, in scrofulous or delicate patients, and in glandular enlargements of syphilitic character, which have resisted the action of mercurials.

M. Ricord employs the iodide of potassium chiefly in those forms of constitutional syphilis which he has termed tertiary. These are tubercles of the skin and mucous membranes, which, in the venereal pathology of this surgeon, form the link connecting the secondary with the tertiary forms of disease, nocturnal

pains, periostosis, ostitis, caries, and tumours of the bones ; in all these forms of disease, the iodide of potassium is considered by Ricord as the remedy 'par excellence.' He does not rely upon it so much in the secondary affections of the skin, unless used in combination with the iodurets of mercury. The dose of the iodide of potassium, in the commencement, should be ten grains in the day, dissolved in an ounce of distilled water, and administered at intervals in any convenient vehicle ; every two or three days the dose may be increased, observing its effects ; Ricord increases it ten grains every three days ; he has carried it as far as one hundred and forty grains in the day without any ill effect. The iodide of potassium accelerates the pulse, and occasions a slight heat in the stomach ; generally, however, if the stomach be free from disease or irritation, it materially improves the digestive powers. If given in an overdose, the heat in the stomach amounts to pain, and may be followed by inflammation ; it occasions also when thus employed, pricking or irritation of the skin, followed by a pustular eruption ; sometimes the head is affected, and the quantity of urine enormously increased. Ricord mentions a case in which this took place to the extent of forty or fifty pints in the day, it was not found, on analysis, to contain sugar. We shall return to the special indication for the employment of this remedy when speaking of the particular forms of constitutional syphilis." 129.

Certainly, so far as our experience goes, iodine and its preparations are not worthy of any confidence in primary syphilis ; and are not deserving of much in the true secondary symptoms. But in the mixed symptoms of cachexia they frequently act almost marvellously. In the rupial or ecthymatous ulcerations of the skin, in the diseases of the bones that sometimes *may* result from syphilis, and often *do* result from mercury, the iodide of potassium is highly beneficial. Yet it seems inconsistent and uncertain in its operation ; for, in one case, it will remove the symptoms rapidly and completely, and in another, apparently similar, it will be of only temporary benefit. Nay, in some cases, we have thought that it was in the long run, mischievous, relieving the patient for the time, but rather sapping his constitution eventually.

Of the enormous doses prescribed by M. Ricord we can only say that we should not like to venture on their use. We have never seen anything to prove the utility of excessive doses, and we are sure that they are not unaccompanied with hazard. If ten or fifteen grains a day do no good, more will probably do no good neither, and may, perhaps, do harm. Even moderate doses give rise at times to irritation of the gastro-intestinal mucous membrane.

The Muriate of Gold.—" This remedy is particularly useful in the vegetating forms of the syphilides. It is prescribed in the form of ointment ; from six to sixteen grains of the salt to an ounce of lard. Biett prefers it to every other remedy, as a local application to syphilitic vegetations. Internally it may be exhibited under the same forms, and in the same doses as the bichloride of mercury, its internal use is however uncertain." 132.

We have tried the muriate of gold internally in several cases, but we cannot say that we ever found it of service.

On the whole, from what we have seen, we believe that, with the exception of the iodide of potassium, these new preparations will disappoint practitioners. The great secret of treating syphilis well consists not in the number of tools, but in understanding the handling of a few good ones.

Inoculation of Syphilitic Diseases.—There cannot be a question of the value of inoculation, did circumstances allow of its unexceptionable employment. Inoculation would go far towards settling many litigated questions. M. Ricord has lately experimented very *liberally* with inoculation, and Mr. Parker presents, in a very abridged form, his conclusions. We shall insert the principal here.

"M. Ricord establishes, in the first place, that a chancre, wherever it may be seated, is produced by a specific matter which is secreted by a chancre only, which matter produces a similar disease whenever placed in circumstances favorable to contagion.

This specific matter is only secreted from the surface of a chancre during its first stage, that is, during the period of ulceration, or when the sore is indolent or stationary. At these periods only does a chancre secrete a specific matter capable of producing a similar disease by inoculation. When the sore begins to heal and a process of reparation has commenced, it is merely a simple ulcer, does not furnish a specific secretion, and is not capable of propagation by inoculation.*

If matter be taken from a chancre during the period of ulceration, and introduced under the epidermis by means of a lancet, it produces the following effects. During the first four-and twenty hours the puncture becomes more or less inflamed; from the second to the third day it is accompanied with slight tumefaction, and presents the appearance of a small papula surrounded with red areola; from the third to the fourth day the disease assumes a vesicular form, the epidermis being raised by a fluid more or less opaque, presenting at its apex a small dark point; from the fourth to the fifth day the contents of the vesicle become purulent, the apex of the pustule depressed, resembling very much the pustule of small-pox. At this period the areola, which had progressively increased, begins to diminish or altogether disappears, particularly if the disease does not increase: after the fifth day, however, the subjacent and surrounding tissues, which hitherto had undergone little or no modification or were merely slightly œdematous, become indurated by the extravasation of a plastic lymph, which communicates to the touch the resistance and elasticity of cartilage. After the sixth day the contents of the pustule thicken, the pustule itself shrivels up, and is covered with crusts. These enlarge towards their base, and forming by successive strata, at length assume the form of a truncated cone with a depressed apex. If these crusts are detached, or if they fall off, we find under them an ulcer with the hard base of which we have spoken, extending through the whole thickness of the skin. The surface of this ulcer, of a deep red colour, is foul, covered with a thick adhesive pultaceous matter, almost like a false membrane, which cannot be removed by any attempt to clean the sore. The edges of the ulceration at this period appear as though it had been dug out from the surrounding parts by a sharp circular instrument. The immediate vicinity of the sore is surrounded by a red, dark, or livid margin, more elevated than the surrounding parts.

M. Ricord further establishes that chancre in its commencement is purely a local disease; that constitutional or secondary affections can only take place after this antecedent; that they do not occur in all cases, and only after the lapse of a certain period of time.

Whatever may be the varieties and complications which subsequently follow or accompany the inoculated chancre, the progress of the latter is in all instances

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* "It would appear that these views were likewise entertained by Dr. Wallace, who divides chancre into two distinct stages or phases, the first one of ulceration, the second one of reparation; he particularly insists upon the impropriety and danger of administering mercury during the first stage, that of ulceration."

such as we have described it. The pustular form of incipient chancre is only wanting when the parts to which the virus is applied are destitute of epidermis or epithelium, and it is only preceded by phlegmonoid inflammation when the matter has been introduced into the subcutaneous cellular tissue, or into the lymphatic system.

The ulcerations completely destroyed or arrested on the third, fourth, or fifth day from the application of poison are not liable to secondary inflammation. It is not before the fifth day that the induration of chancres commonly commences, and it is the indurated chancre that is most frequently followed by secondary symptoms; this induration seems to indicate that the affection has become in some measure already constitutional; as long as there is no induration we may suppose the disease to be merely local.

The varied appearance which primary venereal sores presents (says M. Ricord) has given rise to arguments against the identity of the venereal virus, and has led to the promulgation of the theory of a plurality of venereal poisons. Inoculation, however, sets this matter at rest, for whatever may be the actual character of the sore from which we take the pus, provided it be taken during the first stage of chancre, that of ulceration or indolence, we obtain by inoculation a regular pustule when the matter is introduced beneath the epidermis or epithelium; an ulcer when it is applied to a denuded surface: and an abscess when introduced into the cellular tissue, or into the lymphatic system.

The various characters of chancres or primary venereal sores, are due to circumstances which are foreign to the specific cause which produced them; these are principally the particular constitution of the patient, his mode of living, the influence of any antecedent or present disease with which he may happen to be affected, and not least the local treatment of the sore. It is from one or many of these circumstances that we see phagedenic ulcers in subjects who have contracted their disease from others affected with ulcers of the simplest character.

The first stage of chancre, i. e. of ulceration or indolence, is the only one during which the disease is susceptible of propagation by inoculation; the period of this stage is not limited, hence, M Ricord has known primary venereal sores capable of propagation after having continued eighteen months." 34.

Barbarous Operation for Phymosis.—Mr. Parker gives, and apparently approvingly, a full account of M. Ricord's operation for phymosis. Here it is.

"Permanent phimosis, with excessive length of the prepuce, demands the operation of circumcision, unless, (says M. Ricord,) we remedy one deformity by the production of another, in performing the old operation of merely slitting up the prepuce with the knife. If there exist between the glans and prepuce recent and not very firm adhesions, these should be removed by dissection; when the adhesions are firm, it will be necessary only to circumcise as much of the prepuce as may leave free the meatus urinarius; vegetations should be removed with the redundant portion of the prepuce. The old operation, which consists in merely slitting up the prepuce, and removing the angles from the divided prepuce on either side, is liable to many objections, the chief of which is the deformity which the operation occasions; when this plan is deemed advisable, as it may be in persons who have naturally a short prepuce, M. Ricord removes a portion in the shape of the letter V, the apex which corresponds to the base of the glans, the base or open part being taken from the body of the prepuce.

In most cases M. Ricord prefers the operation of circumcision, which is to be performed in the following manner. The penis hanging in a relaxed state, a line is to be traced round it with ink, two lines in front of the base of the glans; this being done, the prepuce is to be drawn forwards, and fixed between the blades of a pair of dressing forceps, which are to be placed in front of the glans, and immediately behind the ink lines; the forceps are to be held perpen-

dicularly and not transversely, and fixed in this position by an assistant. The operator then seizes the prepuce with his left hand and with a scalpel or bistoury, held in his right, cuts off that part of the prepuce, placed before the forceps, the latter serving as a guide for the direction of his incision. That portion of the mucous membrane, which has not been drawn forwards with the skin of the prepuce, is afterwards to be divided, with the view of preventing the secondary phimosis, or paraphimosis. The latter part of the operation is to be performed by dividing the mucous membrane with the scissors upon the dorsal aspect of the glans, and as far as its base; the two flaps thus made are to be dissected off on either side to the frenum, and removed with the latter by one stroke of the knife or scissors.

Some hemorrhage, from the dorsal artery of the penis, that of the frenum, or other small branches demands occasionally torsion of the arteries, or the use of the ligature. The penis should be covered with compresses soaked in cold water or the lead lotion, with the view of keeping down inflammation, and preventing erections. With the latter view also opiates with camphor should be administered." 157.

God help the penises that fall under M. Ricord's knife. He carves them as if he were cutting out a pattern of a penis, instead of a living, retiring, sensitive penis itself. One would think that penises were not made of flesh, so penal are his operations. This may do very well for a Parisian Hospital, but we can tell Mr. Parker that English gentlemen don't like their concerns so interfered with. What the hard-handed people of Birmingham may submit to, we can't say, but we know that in London such bloody-mindedness would not be put up with. If a man has a phymosis, he does not, in most instances have it cut for beauty's sake, but because the phymosis is an inconvenience. He wants as little of the knife as may be, and any surgeon who begins to slash so unmercifully as M. Ricord and Mr. Parker, will be *cut* himself, he may rely upon it.

We have operated, we will venture to say, on more phymoses than Mr. Parker, and we find the old plan answers well enough. The superabundant skin is, in most instances, greatly reduced; and after a year or two, it would hardly be known that any operation had ever been performed. Two or three times we have resorted to circumcision, but we have always found the patient complain, and that very bitterly, of the severity of the proceeding. Mr. Parker, we suspect, will find when he has much practice on private patients in this country, that a little *tenu* with the knife becomes requisite.

Bubo.—We need scarcely say that this may be simple, or "sympathetic," or it may be specific. Ricord, says Mr. Parker, has instituted the test of inoculation as a means of differential diagnosis between the two. The virulent bubo—that arising from the absorption of pus from a chancre, is a disease precisely similar to chancre, differing from it only in its seat, and in the anatomical organization of the parts in which it is seated. The true venereal bubo is the only one which gives a characteristic pustule by inoculation; and is the only certain means of enabling us to determine whether a bubo is venereal or sympathetic. In cases where bubo occurs as a primary symptom, this test becomes of the utmost importance, since by its results alone can we be led to frame a rational plan of treatment.

M. Ricord maintains that those only which furnish the characteristic pus-

ule of chancre by inoculation are capable of being followed by secondary symptoms. Those from which no pustule can be obtained by inoculation are simply inflammatory, and must be treated on general principles.

With reference to the test of inoculation itself, some degree of difference of opinion exists, although M. Ricord states that the reason of this is, that the experiments have not been made in a proper manner.—On this point we consider this author's opinions worthy of attention. Whenever inflammation and suppuration of the cellular tissue, or lymphatic glands of the groin is owing to any other cause than the occurrence of chancre, the pus secreted furnishes no result from inoculation, at whatever periods and under whatever circumstances the test may be made. Neither does it follow, of necessity, that buboes succeeding to true chancres will furnish a specific pus; and consequently, by inoculation, a characteristic pustule. That this may occur it is necessary that the bubo shall not merely be owing to a simple sympathetic inflammation, but that actual absorption of the specific matter of the chancre shall have taken place. When absorption of the matter from a chancre on the genitals takes place, it is generally confined to the superficial glands of the groin; and most frequently the syphilitic poison is conveyed to one gland only, although many of the glands in the immediate vicinity of the latter, both superficial and deep seated, are inflamed, and suppurate at the same time, so that the matter taken from one gland shall be purely syphilitic, and give rise, by inoculation, to the characteristic pustule, whilst those in its immediate neighbourhood, and the cellular tissue, shall be effected by simple phlegmonoid inflammation, the pus from which shall, when tested by inoculation, give a negative result.

It may be very readily conceived, that the irritation produced by the passage of the syphilitic poison through a lymphatic vessel and ganglion may excite in the neighbouring organs an inflammation which is not specific, but merely phlegmonous, and this appears to be the true nature of the case. M. Ricord opened a bubo which had succeeded to a chancre, the pus from which produced no result by inoculation. In the centre of the abscess he discovered an enlarged lymphatic gland, presenting an evident fluctuation; this was punctured and tested by inoculation, the characteristic pustule of chancre was obtained.

It appears to us that the test of inoculation, even on M. Ricord's own shewing, (and we are far from taking all these facts upon trust,) is not worth much. It will scarce hold water after all. For *first*, we think that bubo should seldom suppurate at all—*secondly*, even though it be a bubo from a "chancre," it need not necessarily be specific—and *thirdly*, there are all the fallacies that may have waited on M. Ricord's experiments, and may wait on our own to be considered. Does M. Ricord mean to say that no secondary symptoms follow bubo from chancre, unless it will furnish the "test" of inoculation? How then does he account for those cases of secondary symptoms where there has been no bubo at all? If the virus can be absorbed without occasioning any inflammation of the gland, it can surely be absorbed without occasioning *specific* inflammation of the gland. The whole affair is a matter of moonshine. We should be sorry to pin our faith on M. Ricord. In a memoir he asserted that venereal ulcers deep in the vagina were quite common. We have examined a large number of

women with the speculum, and we have *not* found such ulcers common: very far from it. We warn our readers to receive with great caution these positive assertions on the results of inoculation.

We turn to the treatment of bubo.

"In the first stage of bubo, when the inflammatory symptoms are not marked, M. Ricord recommends rest and compression; this author has remarked that, in patients wearing trusses buboes are seldom if ever developed on the side where the pressure of the truss is acting, but on the opposite one; hence in the first stage of bubo, that of mere enlargement, without any acute inflammatory action or pain, a well regulated pressure, by means of an appropriate bandage or apparatus, is frequently successful in dispersing the tumour. This plan of treatment is above all useful in the bubou d'emblée. It must be associated with an antiphlogistic regimen, rest, and gentle aperients.

The same plan of treatment may be followed in the treatment of the true syphilitic bubo, unattended by much pain or inflammation. In this stage, unless specially contra-indicated, mercury may be employed to assist the resolution of the tumour. The primary syphilitic bubo, may (says Dr. Wallace), in its first stage, be resolved in ninety-nine cases out of a hundred by mercury; if this medicine be used after the plan recommended for primary syphilis, and if its operation be assisted by rest, laxatives, abstinence, and cooling lotions. It is well, in reference to this opinion, to remark, that a vast number of those buboes which succeed to true chancres are sympathetic, that is, when they suppurate, they do not furnish or secrete a specific pus. Hence it must be evident that the general employment of mercury is, to say the least, unnecessary, except so far as it may be used with a view of controlling inflammatory action. Cullerier thinks that at this period, uncertain as we must be as to the true character of the bubo, that it should be treated as a pure and simple inflammation. When accompanied by chancre it is of vast importance to our success in the resolution of the bubo, to allay all pain or irritation which may exist in the sores themselves, and for this purpose the aqueous solution of opium before recommended will be found of great service.

When the commencement of bubo is accompanied by much pain, tenderness on pressure, or heat of parts, the local abstraction of blood may be necessary, although I have not a high opinion of this measure in the resolution of bubo generally. It may even be necessary to bleed from the arm if the patient be plethoric, and the local disease associated with general excitement, or much symptomatic fever. In local bleedings thus employed, it will be found advantageous to apply a small number of leeches, from four to eight, or more, and wait till the oozing of blood begins to cease, then to apply another relay of leeches so as to keep up a constant draining of blood from the part for twelve or more hours. This form of bleeding, termed 'permanent,' is found to reduce the inflammation more certainly and speedily than the application of a large number of leeches at once. Two, three, or more relays of leeches may be thus employed, proportionate to the strength of the patient and the intensity of the local disease." 105.

We have tried compression, but we must confess that it disappointed us. First of all, it is not very easily regulated satisfactorily, being either too great or too little. Secondly, it has seemed to us in many instances to aggravate inflammation, rather than to disperse it. Compression has, in our hands, proved most serviceable in cases of indolent bubo, not of incipient bubo.

And of mercury we must say that it should be used more sparingly than Mr. Wallace advised. There are many cases, where the bubo displays little tendency to inflammation, in which mercury acts very well. But it will

often happen that the bubo grows worse under its use. Perhaps the best rule is not to give it, if there is much inflammation; or to discontinue it if the bubo increases during its employment.

We agree with Mr. Parker that great leeching is seldom of great service. At the same time we would not, as some do, prescribe it altogether.

There cannot be a doubt of the occasional utility of blisters. Even when suppuration seems certain and extensive we have seen them cure bubo. But we have often seen them fail, and, though a good, we cannot but confess that they are an uncertain remedy; for they fail in cases, to all appearance, similar to those in which they answer. We *think* we have made out that they are not applicable to bubo much inflamed—nor to incipient bubo—nor to persons of a very irritable habit. But we would not speak very confidently upon any point, and, possibly, the best practical rule is this, to *try* a blister when the bubo is advancing in spite of other remedies. It may do great good, and it cannot do much harm. Even if the bubo suppurates it facilitates the pointing, and limits, we fancy, the extent of the abscess.

"In the treatment of indolent bubo, in the commencement, M. Ricord has recourse to the discutient plasters with compression in the day time, and friction with the iodide of potassium, or mercurial ointment, in the evening, covering the part during the night with a poultice. If this has not a marked effect upon the enlargement in a few days, blisters with the bichloride of mercury on Malapert's plan are employed. Frictions with ointments composed of the proto-ioduret of mercury,* or compresses soaked in a dilute tincture of iodine,† are also very useful in the resolution of the chronic or indolent bubo." 110.

We have found the tincture of iodine serviceable in chronic bubo. It occasions a series of desquamations of the cuticle, which appears to promote the resolution of the gland. Sarsaparilla and the liquor potassæ, the latter in full doses, are of great utility.

"The disease may terminate in two ways: the enlarged glands may pass on slowly to suppuration, or assume a form of induration of a scirrhous or scrofulous character. In the latter form, friction with croton oil, the tincture of iodine, or the emp. belladonnæ with the tartar emetic, may be used as local applications. Small issues may also be formed over the induration, by means of the caustic potash, or if the disease assume a purely scirrhous character, extirpation may become necessary."

We cannot say that we have seen buboes grow scirrhous. A pregnant instance this of the loose way in which "scirrhus" is viewed by continental surgeons. On all that relates to the malignant alterations, they are many years behind us. We need scarcely say that we do not patronise the extirpation of such glands, and we would caution Mr. Parker's readers and Mr. Parker himself against indulgence in it.

An early opening and a free opening is the best for the *bubonic* abscess. If the skin is very bad, the potassa fusa may be used, but we believe that with judicious management, the skin generally recovers itself after a proper opening with the knife.

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* ℞. Hydrargyri proto-ioduret, ℈ j.
Adipis, ʒ j. M. ft. Unguent.

† ℞. Tinct. iodinii, ʒ j.
Aquæ distillat, ʒ ij. M. ft. Lotio.

PERISCOPE;

OR,

CIRCUMSPECTIVE REVIEW.

"Ore trahit quodcunque potest, atque addit acervo."

NOTICES OF SOME NEW WORKS.

OBSERVATIONS ON THE DISORDER OF THE GENERAL HEALTH OF FEMALES CALLED CHLOROSIS; SHEWING THE TRUE CAUSE TO BE ENTIRELY INDEPENDENT OF PECULIARITIES OF SEX. By *Samuel Fox*, Surgeon. pp. 132. London, S. Highley, Fleet street.

MR. FOX informs us, in his Preface, that:—

"His chief endeavour has been to direct the reader's attention to the fact that, the disorder called CHLOROSIS, is NOT peculiar to the FEMALE SEX, and its occurrence limited to ANY particular period of life;—but that it is solely a complication of affections (ENTIRELY INDEPENDENT OF SEXUAL FORMATION) resulting from, and almost invariably attending a peculiar functional derangement of the liver and digestive economy; and further, that the Chlorotic appearance as it is termed, so often to be observed, not only in young females during the earlier years of growth and long before the period when puberty commences, but in those also of adult age, whether MARRIED OR SINGLE, as well as in the young and delicate of the MALE SEX,—may be thus easily accounted for.

The Author sincerely hopes that, the simple mode of treatment, in accordance with his notions of the true cause of this disordered health (and from his long experience of its efficacy, he can confidently assert it to be by far the most successful,)—will induce those of his Medical Brethren who may adopt it, to throw aside the use of most, or all of those disgusting and too often dangerous medicines, called EMMENAGOGUES—which not only are constantly proving ineffectual for the object of their administration, but even tend in a great degree, to increase the real and only disease of the Chlorotic female."

We beg to observe that the capitals are Mr. Fox's own. Of course he best knows what is admirable and what is not; yet, on the principle that "good wine needs no bush," we think that both capitals and italics should be very sparingly used.

It appears that Mr. Fox was first induced to study Chlorosis with attention, from observing that youths and delicate males were, as well as females, subject to the disorder.

"From practical observation, I conceived the immediate source of the complaint in either sex, to be an obstruction, in the capillary extremities of the biliary vessels, giving rise to chronic functional derangement of the liver. Acting on this belief, I discarded the idea of Chlorosis being an idiopathic, or primary disease,—and I adopted a mode of treatment in accordance with my view of the case, which, for upwards of thirty years, has never deceived me."

He goes on to observe:—

"Is not the retention of the menses the cause of the general ill health of the female? I CONTEND THAT IT IS NOT—on the contrary, that the retention of this natural discharge is only one of many other symptoms and sympathetic affections, whose common origin is derangement of the biliary apparatus of the liver; and I also contend, that, in by far the greater proportion of cases, this

functional derangement of the liver is primary, or idiopathic; and that the symptoms and affections called dyspepsia, are only the results of the sympathy existing between the liver and the other chylopoietic viscera. At the same time I admit that there are also many instances to be met with, where an idiopathic dyspepsia was clearly the cause of the functional derangement of the liver. Yet, this, in no wise, alters or impairs my position of the liver being the immediate or proximate cause of the retention or suppression of the menses; and I can confidently assert that, unless the remedies be such as possess a salutary influence over the liver, a healthy return or appearance of the catamenia can never be expected.

A little farther on Mr. Fox takes even bolder ground. He does not scruple to say:—

"From the view which I have taken, and the due consideration which I have given to the various opinions on the subject under consideration; and notwithstanding all that has been advanced in support of my opinion, still I am fully convinced, that it is a matter of not the slightest consequence, whether the menstrual discharge be a SECRETION OR NOT; and however peculiar it may be considered in relation to its characters and qualities, I notwithstanding dissent from these medical authorities, still further on the subject of menstruation, for I do not consider it to be requisite for the health of the human female, that she should ever MENSTRUATE AT ALL. By this I mean that the periodical loss of a certain quantity of blood or a fluid from the uterus, is not required for the safety of the general health, and that the catamenial discharge is merely a local relief, or resolution of the vessels, (as Dr. Lococke very properly terms it) when they have become periodically and healthily congested."

From this it must be evident that Mr. Fox is no temporiser. His is no sickly, milk and water theory. He goes the whole hog against common opinion, and either he or it is quite right or wrong. Mr. Fox supports his position by the following argument:—

"If menstruation be necessary to the health of the female, as it is said to be by most medical writers, then it is absolutely necessary that all females should continue to menstruate during the whole period of life; no exception can be admissible—no female, according to this rule, can be without the function, and, at the same time, be healthy; for, if otherwise, the health would terminate at the middle period of life, when the cessation of the menses usually takes place; since she would then be deprived of that function which had been hitherto so essentially necessary for her health. Again, if menstruation is so important to the female during the early part of life, that is from about the age of fourteen, at which it usually commences,—at a time, it must be remembered, when the constitutional faculties are in full vigour and energy,—and when one would think the female required no such aid to support her health.—How, then, does it happen that the function is no longer demanded for the security of her health at that period of her life, when the powers of her constitution are becoming not only debilitated, but in fact, decayed; and when too she stands most in need of all the aid derivable from any source, or from the continuance of any function? This does not appear to me to be reasonable; for, menstruation is either important for the safety of the general health all through the course of life—or the health does not require it at any period of life."

There is this objection to such reasoning. Before the age of puberty and after the age of menstruation, the female constitution is different from what it is during the menstruating age. Prior to it the uterine system is not evolved—subsequent to it that system atrophies—and it may be reasonably thought that an evacuation requisite while it is subject to congestion is not requisite when it is not subject to congestion. Mr. Fox may reply that this favours the idea of such evacuation being needed for the uterus, but not for the health. The uterine system, however, is so linked with the general, during the period of fertility, that what affects the one will affect the other. And, after all, the question re-

solves itself into one of fact. If, (a female being in good health,) a cause acts directly on the uterus and disturbs its function, and if deranged health succeeds, that proves, so far as anything in medicine is proved, that uterine disturbance breeds general. And who has not witnessed such a case?

Mr. Fox carries on the argument, or puts it in another shape:

"It is also true that, if the female is deprived of the ovaria, she is no longer capable of becoming impregnated, and she no longer menstruates. So also is it, with regard to the male sex. The testes are the agents for producing the fecundating fluid, consequently, a deprivation of them, renders him unable to impregnate the female. But, does the health of either party decline in consequence of their losing the faculty of procreating their species? The healthy eunuch is an answer as regards the male; and so far from the discontinuance of the monthly discharge in the female being prejudicial to her, it is even found that the health of those individuals, in whom the deprivation of the ovaria has been either congenital or chirurgical, is usually of the best. And, we know that animals of both sexes, under similar circumstances, thrive in a far greater proportion, than those possessed of the means of propagation."

But if that which, some way or another, produces the congestion, be absent, and consequently no congestion takes place, then the relief of the congestion may be well supposed to be unnecessary. This applies to either testes or ovaria. Persons may get on well enough without them, though it does not, therefore, follow that, while they are present, their functions can be interfered with harmlessly.

Mr. Fox, indeed, may be said to give up the point, for he states:—

"It appears to me that, the real cause of the disordered state of the system which so frequently supervenes, the sudden cessation of the menstrual discharge from cold or fright for example, is the already congested vessels of the uterus becoming rapidly engorged and producing, by that means, sympathetic nervous irritation throughout the whole system, and thus effecting a temporary change in the general health, in accordance to a well established law in pathology, that no local excitement or irritation can continue long without producing an effect on the system at large. A similar effect will be produced in either of the sexes, by a sudden morbid engorgement of the vessels of any of the organs of the body, as we know by daily experience; nothing is more common than a congestion of the vessels of the mucous membrane of the nose, from taking cold suddenly, and, in the first instance, the secretion is always suspended."

We will not say much of the reasoning or of the analogies here. They are not very clear to our understanding. But the essential point is conceded, that general derangement succeeds suppression of the catamenia; and surely this would be likely to succeed whether that suppression resulted from external or internal causes. The quo modo of the general derangement is a matter of speculation—the fact is the main thing.

We fear that Mr. Fox is either a very hasty reasoner, or else that he lacks experience. Take the following passage:—

"It has been recently asserted, that symptoms resembling GONORRHŒA have been the consequences of sexual intercourse during the period the woman was menstruating. Now, we know very well, that any cause of excessive irritation may produce inflammation in either the serous or mucous membranes. Thus, the serous membranes will readily take on the adhesive inflammation, whilst those of the mucous membranes will, on the contrary, take on the suppurative inflammation; it may follow, therefore, that an over-anxious and excited coïtus may produce, in the male, an increased action in the urethra to an extent, sufficient to bring on the suppurative inflammation of its mucous membrane, and hence a diseased secretion from the lacunæ glands, simulating virulent gonorrhœa. It may be fairly presumed, there must have been, in the cases alluded to, an over-appetence for coïtion on the part of the male, to have induced him to

associate with a female under her circumstances. But the idea that the menstrual discharge is in any way noxious, and particularly that it possesses INFECTIOUS PROPERTIES capable of producing gonorrhœa, is totally at variance with medical experience. Moreover, if EVERY FEMALE IS PERIODICALLY INFECTED with LOCAL DISEASE because she MENSTRUATES, then the very many persons who have daily intercourse with females who are menstruating, will, as a matter of course, become INFECTED with GONORRHŒA: but we know that such is not the fact; for there are few men who have so complete a control over their passions as to forego the gratifications they anticipate, merely on that account: and the menstrual discharge must infect all or none; there can be no qualification."

First, Mr. Fox denies by implication what most men of experience will affirm —*that* urethral discharge undistinguishable from gonorrhœa in the male, will follow connection with a menstruating female;—*secondly*, Mr. Fox attributes such discharge to particular excitement in the male, though, in the majority of cases of this sort, the fact of menstruation was not known at the time of coïtion: —*thirdly*, Mr. Fox libels men by saying, that few would fail to gratify their passions with a menstruating woman, whereas we believe the fact to be, that few so gratify them;—*fourthly*, he asserts that if a discharge be capable of exciting disease it must always when applied excite disease, the fact being notoriously the contrary; two men may have connection with a clapped woman, and while one gets the clap the other does not. A certain condition of the recipient as well as of the giver is requisite.

Passing to the predisposing causes of chlorosis, we think Mr. Fox's observations judicious:—

"Females in almost all parts of the world are chiefly confined to the domestic management of a family, and it would seem that nature, in her wisdom, fitted and intended them for such employments; seeing that the delicacy of their frames and constitutions is inadequate to follow the more powerful and laborious avocations. It is, however, much to be regretted that such confined occupations, although necessarily required, are not the most beneficial to the health of the individuals engaged in them, who are thus deprived of exercise in the open air; for nothing tends to disorder the functions of the body so much as close confinement within doors, which, if persisted in, for any length of time, is sure to lead to this derangement of the general health of which we are now speaking. Unhappily, it is too often the case that very many females, from their slender circumstances in life, are urged by necessity to support themselves at some sedentary employment, and are thus deprived, day after day, of all means of exercising the body, by which only a free circulation of the animal fluids can be maintained. Hence, inactivity of the bowels and obstinate costiveness ensue, occasioning morbid irritation throughout the whole course of the intestines, which soon gives origin to functional, and, if not seasonably corrected, to organic disease of the liver, from which springs a host of affections destructive of the general health. If we add to this the smoke and contamination of a large metropolis or crowded towns, the constant inhalation of miasmatic vapour always existing in such places, the frequent atmospheric changes of our climate and the exposure of the external surfaces of the body to these vicissitudes, the irregular mode of living, and various moral causes, we cannot wonder greatly that the health of the weak and delicate female should so soon become deranged."

That mauvais honte of young females which leads them so sadly to neglect themselves is indeed much to be lamented.

How chlorosis results from obstructed pores of the liver, Mr. Fox sets forth in petto in this paragraph:—

"It appears therefore manifest, from the foregoing observations, that under a deterioration of the hepatic function, an unhealthy condition of the stomach and chylopoietic viscera may be produced, the glandular system greatly obstructed, the secretions and excretions unhealthily performed, an impoverished condition of

blood and juices generally obtains, and a consequent loss of tone and energy throughout the whole course of circulation result; thus, also, the vessels generally throughout the system, are insufficiently supplied with blood, and consequently, those of the uterus amongst the rest, which occasions the absence of the menses at the expected period,—general ill-health prevails,—and this is what AUTHORS call CHLOROSIS."

We must candidly confess that, on attentively perusing the work before us, the exact mode in which Mr. Fox proves his case is a mystery to us. Certainly morbid anatomy furnishes none of the proofs, nor is the precise train of reasoning very palpable. He observes indeed:—

"It has been shown by Dr. Johnson and others, that there may be considerable and long-enduring functional disturbance of stomach and intestines, without its being possible, after death, to discover any structural disease of those organs, or at least to such an extent, as to warrant our assuming it as the sole or chief cause of the derangement during life; it is therefore fair, similarly to conclude that there may be a long continued deranged function of liver, without THAT VISCUS being in a perceptible state of organic disease; and this I believe to be the fact in the complaint called Chlorosis; though it is obvious that continued functional derangement of any organ, must ultimately produce structural disease."

So morbid anatomy may be dispensed with. But, after a fund of reasoning, Mr. Fox winds up:

"This then, is the only rational view of the cause of CHLOROSIS in LOVE-SICK MAIDS; viz, that by long-continued grief or disappointment, the functions of the stomach and liver have become deranged; the secretion of a due quantity of bile ceases, the digestion and chylification are greatly impaired, and from a deficiency, or alteration in the properties of the gastric juice, the appetite fails, or is rendered capricious; and, as little or no good blood is made, the cheeks, gums, and lips, lose their fine red colour, whilst the long train of symptoms and affections, already noticed, follows. BUT AUTHORS CALL DISAPPOINTMENT IN THE OBJECT OF DESIRE—LOVE-SICKNESS—A CAUSE OF CHLOROSIS; but on this subject I shall somewhat enlarge, when noticing some of the remedies that have been recommended for the removal of Chlorosis."

Mr. Fox arrives after several chapters at the treatment of chlorosis. He is indignant at the idea of matrimony.

"It is well known, he says, that the general appearance of the female under this disordered state, is any thing but attractive and prepossessing; on the contrary, she is rather disgusting to the opposite sex, the face having lost its vivid color, and become pale, or of a yellowish hue, and the whole body flaccid, with œdematous swellings. How is it therefore, to be expected, under all these disadvantageous circumstances, that the remedy here recommended can, by any possibility, be within reach of the female, even supposing she were so inclined; and were it actually at the risk of character and of all moral feeling, to be resorted to, in the way recommended, it would nevertheless fail to produce the effect, the author is led to expect. It is well known that married women, and those who are given to immoral indulgences, are equally liable to this disordered state of the general health, called Chlorosis; medical practitioners of observation, find this frequently to be the fact; indeed, it is almost daily occurring. Many remarks are made when a young woman is existing under this complication of affections of disordered health, THAT MATRIMONY IS THE ONLY CURE: the absurdity, and I must say, obscenity of this observation, in my opinion, displays a want of information, or rather a total ignorance of the real nature of the disease in existence."

We confess that the fact of married females being *equally* liable with the unmarried to chlorosis, startles us. It is quite new; and, obscene as the idea may be, we certainly have seen matrimony prove "a sovereign medicine" after the Pharmacopœia had done its best, or worst, in vain.

Passing over various criticisms on various remedies, good, bad, and indifferent, we present our author's own plan of treatment.

"The medical treatment must consist chiefly in arousing the liver to a more active and healthy performance of its offices; the bowels are in the first instance to be thoroughly evacuated of their offending contents, and they are to be afterwards kept from any accumulation, by the occasional use of some aperient medicine; but not in a powerful degree. Infusion of senna, Epsom salts and senna, or rhubarb either in substance or infusion, will be found generally to answer the purpose; of course, selecting such as are found by experience to be best adapted to each individual case. The bowels having been brought under proper command, mercury should be judiciously administered, until a more healthy secretion of bile shall be obtained; in fact, the healthy functions of the liver must be restored, or very little advantage will result from any, however elaborate mode of treatment. Other means must also be had recourse to, to restore a healthy condition of the system generally. Dr. Marshall Hall recommends sponging the body with salt and water, and afterwards using friction for some time with a coarse towel;—I have adopted this plan in many instances, and have found it exceedingly useful—it may, therefore, be amongst the other arrangements, as also the free application of the flesh-brush. By these means, a determination of the blood to the surface will be promoted, a matter of considerable importance; pure and frequent changes of air, with moderate exercise, when the patient can bear the fatigue, will also be of great advantage in inducing the same object."

We must say that this smacks a little of the mountain in labour. The treatment here set down is just what five doctors out of six would pursue. And we cannot but remark on the sanguine temperament of Mr. Fox, *or* on his wonderful good fortune, when he has found habitual costiveness almost invariably cured by brown bread. Who of us has not prescribed brown bread for costiveness? And who has not seen it of some service? but who, save Mr. Fox, has had the luck of finding it almost invariably successful?

In conclusion, we would hint that Mr Fox has given no proofs of this exclusive theory of Chlorosis—that he has not shown that the uterine system is never primarily at fault—that he has not proved that the suppression of the catamenia is of no consequence—and that he has not convinced us that emmenagogues are always useless or necessarily dangerous.

Every body knows that chlorosis is frequently the result, rather than the cause of deranged general health. But we should be sorry to go so far as to assert that the uterine system *never* takes the initiative in the disease. The great general facts are always the truest; and when we see that young unmarried women compose the vast majority of the subjects of chlorosis, and when we reflect on the constrained and artificial state in which their uterine system is kept by the usages of society, we cannot but suspect that that system plays the most important part in the phenomena of the disease.

At the same time the old and the pernicious notions respecting the treatment of chlorosis, are fast wearing away, if they have not quite disappeared from the minds of intelligent practitioners. Emmenagogues are no longer looked on as specifics, but the uterine system is appealed to through the medium of the general health, both physical and mental. Yet it would be folly to do away with emmenagogues altogether, and experience has shewn that some remedies of that description may be usefully combined with such as enjoy a more extended operation. Such is the common sense view and, we believe, the true one, of the treatment of chlorosis.

ANATOMY.

I. THE SURGICAL ANATOMY OF THE GROIN, THE FEMORAL AND POLITEAL REGIONS. By *Thomas Morton*, formerly one of the House Surgeons of University College Hospital. Illustrated with Lithographic Plates and Wood Engravings. London, Taylor and Walton, 8vo. pp. 207. 1839.

II. THE ANATOMIST'S MANUAL; OR, A TREATISE ON THE MANNER OF PREPARING ALL THE PARTS OF ANATOMY, FOLLOWED BY A COMPLETE DESCRIPTION OF THESE PARTS. By *J. P. Maygrier*, M.D.P. Professor of Anatomy and Physiology; of Midwifery, and the Diseases of Women and Children; Physician to the Bureau de Charité of the Tenth Arrondissement; Member of the Medical Society of Emulation of Paris, of that of Practical Medicine in the same City; of the Medical Societies of Liège and Toulouse; of those of the Sciences in Maçon, Marseilles, &c. &c. &c. Translated from the last French Edition. London: George Henderson. 32mo. pp. 557. 1839.

III. THE SURGICAL ANATOMY OF THE ARTERIES, AND DESCRIPTIVE ANATOMY OF THE HEART; TOGETHER WITH THE PHYSIOLOGY OF THE CIRCULATION IN MAN AND INFERIOR ANIMALS. By *Valentine Flood*, A.M. M D T.C.D. Member of the Royal Irish Academy, Member of the Royal College of Surgeons in Ireland; and Lecturer on Anatomy and Surgery in the North London School of Medicine. London: S. Highley. 12mo. pp. 237. 1839.

IV. TEXT-BOOK OF ANATOMY FOR JUNIOR STUDENTS. By *Alex. Jardine Lizars*, M.D. Fellow of the Royal College of Surgeons of Edinburgh, Lecturer on Anatomy, and Examiner to the University of St. Andrews. Part I. 12mo pp. 272. 1839.

1. Mr. MORTON informs us that the present publication is intended to form, with the Surgical Anatomy of the Perinæum already published, part of a Work, which, when it shall have been completed, will contain a description of the Surgical Anatomy of some of the most important regions in the human body.

"The drawings, from which the lithographic plates have been engraved, were very carefully made after my own dissections; as were also those from which the wood-engravings have been taken, with the exception of Nos. 4 and 5, which were accurately copied from similar plates in Hesselbach's Essay upon the Origin and Progress of Herniæ."

The execution of this work is highly creditable to Mr. Morton. So far as we have dipped into them, his descriptions of the anatomy of hernia are exceedingly correct. The work is well adapted for students, and is calculated to supply them with information of a very valuable character.

The plates are extremely well executed. There are eight colored lithographs, besides several wood-cuts. We recommend the work strongly.

3. Dr. Flood informs us in his preface:—

"My principal object in writing the following pages, has been to present the professional reader with an accurate description of the Heart and Arteries of the human subject, in as condensed a form as would be consistent with clearness. To make the work still farther available for practical purposes, I have added a description of the principal operations performed on the larger trunks, and incorporated a vast number of the varieties, which an operating surgeon should be prepared to meet in the course of his practice. In collecting the anomalies of

the vascular system, I have freely availed myself of the labours of Farre, Baillie, Meckel, Haller, Barkow, Bouillaud, Otto, Gintrac, Burns, Barclay, Tiedemann, Geddings, Cruveilhier, Wardrop, and the authors of various articles, in the *Philosophical Transactions*, *Cyclopædia of Anatomy*, and periodical works of the present and several preceding years. I have also to express my special obligation to Dr. P. H. Green, who, since my settlement in London, has liberally permitted me to peruse his scarce and valuable work on the varieties of the arteries—a work of the deepest research, and abounding in the most accurate information."

"In the form of an introduction will be found an outline of the physiology of the circulating system, in man and inferior animals, illustrated by several wood-cuts."

As a sample of this work, which will be really a valuable acquisition to every operating surgeon we extract the following short passage. We confess it is almost like shewing a brick as a sample of a house.

"*Irregularities affecting the ligature of the common carotid artery.* A very remarkable case has been observed in a subject at the Richmond Hospital School, in which there was no common carotid on the right side—the external and internal carotid arising separately from the arch of the aorta. The order of the vessels were—right subclavian, right external carotid, right internal carotid, left common carotid, left subclavian. My colleague, Mr. Power, showed this preparation to the younger Tiedemann when he visited our School, and Tiedemann remarked that no similar case had been observed or heard of by himself or his father. Mr. Harrison observes in a note in his book on the Arteries, vol. i. p. 29 —'I have known two examples of the internal and external carotids arising on one side separately from the aorta;' but makes no other observation on the subject.

In some cases the common carotid is crossed in front by the inferior thyroid artery. In other cases the vertebral artery ascends behind it to pierce the third or second vertebra.* Cases are recorded, in which it is ascended behind the angle of the lower jaw† before it bifurcated, and on the other hand, it may bifurcate as low as the inferior margin of the thyroid cartilage,‡ or at the sixth cervical vertebra§: lastly, it sometimes happens, that there is no bifurcation, the common carotid and internal carotid forming a continuous trunk, which gives off the branches of the external carotid.

There are references in other parts of this work to instances in which the common carotid gave off the inferior thyroid, superior laryngeal, pharyngeal ascendens, superior thyroid and right vertebral."

The only pity is that so useful a little work should be got up in so plain and unadorned a manner.

4. Our friend Mr. Lizars may explain himself.

"Having had ample opportunities of observing how much Students are generally occupied during lecture time in taking notes of the Anatomical Demonstrations which are then being delivered, I have prepared the present Treatise with the view of saving them that trouble. In taking this step I shall probably incur the disapprobation of those who imagine that it is advantageous for the

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* "Burns, p. 170. Hargrave, p 69. Hird. L. Med. Gaz. Feb. 4, 1837."

† "Green says, it may divide as high up as 'the superior part of the styloid process,' which must mean at the base of the skull, but he gives no explanation, instance, or authority."

‡ "Hart. Todd's Cyclopædia Art. Carotid."

§ "Burns on the Heart, p. 285. Morgagni Epist. 29, Art. 20."

Pupil to be so engaged; but this opinion, I feel convinced, is erroneous, and for the following reason—That the learner, when thus engaged, generally loses half the lecture, his eye and attention being necessarily removed from the object under description, upon which alone they ought steadily to be fixed. This little work will enable the Student to follow lectures on Anatomy with (I trust) every possible facility; and will supply him, at the termination of his studies, when his time is invaluable, with the readiest means of reviewing this branch of Science within the narrowest limits. In the execution of my task I have steadily aimed at the greatest degree of conciseness compatible with the requisite minuteness, and with accuracy; and utility has been the great and constant object of my ambition."

And Mr. Lizars has succeeded à merveille.

A Lecture on Civilization; read at Northampton before the Members and Friends of the Society for the Diffusion of Religious and Useful Knowledge, on Monday, June 30, 1839. By *Archibald Robertson*, M.D. Published at the request of the Society.

Every one acquainted with the talents of Dr. Robertson would be prepared for an eloquent address on such a subject as the above—and they will not be disappointed. The lecture is not a medical one, and therefore our notice of this pamphlet must necessarily be very concise. The accomplished author arranges the causes of progressive civilization in two classes—divine and human. The first includes language, laws, government, and religion:—the second comprises printing, intermixture of mankind by means of war and conquest—geographical discovery—commerce—colonization—and emigration—arts, sciences, literature, poetry and music. On all these topics Dr. Robertson makes some highly important remarks—with the exception of religion, which he properly leaves to his clerical colleagues, as falling more especially within their province. It cannot be expected that we should analyze Dr. Robertson's theory of the causes of civilization throughout its various ramifications. We were strongly tempted to make an extract from the "Art of Printing," as one main cause of mankind's improvement, and more especially as an art with which we have had something to do, for the last twenty or thirty years; but another subject, with which we have had some acquaintance, before these "piping times of peace" took place, called us off from leaden types to leaden bullets—from the press to the press-gang—from ink to blood—and from sheets of foolscap to the winding-sheets of our soldiers and sailors. The passage occurs under the head of war and conquest. It is *too* flattering to John Bull to be passed over.

"I have before hinted, that the principle here pointed out, may be usefully applied to the investigation of the varieties of National Character. Let us try what we can make of it by applying it, as a test, to that of our own country. England is confessedly the foremost nation of modern Europe; being, by common consent, considered at the head of the Civilization of the world. What has made her so? Some will say 'her free institutions.' But I urge in reply, that to say so would be mistaking the effect for the cause; for, I contend, that it was the pre-existing superiority of her national character that enabled her to acquire those free Institutions that have so long been the birth-right of Britons, and the admiration of the world. My belief is, that the supremacy of the British People is owing to the frequent intermixture of races in the early stages of our national history. Most of you familiarly know, without being reminded by me, that the Ancient Britons, the primitive Celtic Inhabitants of our Island, were conquered by Julius Cæsar, about fifty years before Christ. The Romans kept possession of this Island for nearly five hundred years. Then came the

Saxons as conquerors; next to them the Danes; and last of all the Normans. It thus appears that the blood that animates the stout heart of an Englishman is not one unbroken stream, but a fluid collected from many parent-fountains. Hence, the composite order of our national character; in which a nice observer might be at no loss to detect traces of the simplicity of the Celt, the greatness of soul of the old Roman, the solidity of the Saxon, the fire, with somewhat of the ferocity, of the Dane, and all the pride, and more than all the military ardour, of the gallant Norman. This I take to be the true secret of that *Pluck* (to use a homely, but expressive, term) in which all true-born Englishmen especially pride themselves; that inherent courage which enabled our ancestors to wrest their free Institutions from the reluctant hands of the Plantagenets, and the Stuarts. What was it but good Old English *Pluck* that enabled our fellow-countrymen, of our own day and generation,—emulous of the deeds of their forefathers at Agincourt, and at Cressy,—to withstand the fury of an iron shower for eight or ten long hours, and at last to annihilate the overgrown military despotism of the modern Attila, on the plains of Waterloo? This was a deed of arms, such as the world has seldom seen: a deed of prowess, which, added to countless triumphs in every quarter of the globe, by sea and land, has exalted the bravery of Britons to a height of renown

'Above all Greek, above all Roman fame.'

Of course I do not ascribe *all* to the physical superiority of the race; moral causes have had their influence; and, amongst these, the public spirit arising out of our free institutions has not been the least conspicuous. Our pure reformed worship too has had its share; for religion is the strength of a nation, just as truly as 'sin is the reproach of any people.' Unless the national character had been sprinkled, and purified, by the living waters of the National Faith, neither the bullet nor the bayonet would have fulfilled the National hope, as weapons of defence. Climate also has had a marked effect. The climate of our native land, much as it is abused, has in it many redeeming qualities. It tends to make our numerous population hardy, enterprising, and free. Its very severity and caprice teach daily lessons of prudence, foresight, activity, and industry. It has been my lot, in the course of my life, to be familiar with various climes; and, I am inclined to give the preference to our own, with all its admitted uncertainty, over them all. I would say of the climate, what the delightful Poet Cowper, says of the Country itself:—

'England, with all thy faults, I love thee still!'

I firmly believe, on the evidence of Statistical Tables, that the English climate on the whole, is as conducive to the duration of human life as any of the most favoured climates under the Sun. Advantages and inconveniences are distributed with a more impartial hand, than we, on a transient view, are apt to imagine. If the more Southern Climates are gilded with a brighter sunshine, perfumed with more fragrant gales, and decorated with a greater profusion of plants and flowers, they are, at the same time, perpetually exposed to pestilential heats, infested with noxious animals, torn by hurricanes, and rocked by earthquakes, unknown to the rougher regions of the North."

Our readers are well aware that these sentiments have been those which we have long preached—we mean those respecting climate. But when Dr. Robertson casts an eye over our own country, and deliberately reflects on the scenes which have too recently disgraced it in the eyes of Europe—such as the fanaticism of certain sects—the followers of Irving—Johanna Southcote,—the Kentish Christ &c. not to mention the revivals of Scotland, the Chartist mania, and hundreds of other instances, of which the red Indian, the tawny Hindoo, and the jet black African would be ashamed, he will see that there is much need of the schoolmaster *at home*, as well as *abroad*, and that the society, of which he is a distinguished member, has a great deal to do, before they raise the lower orders of

this country even to a level with those of many parts of the Continent—especially Holland and Prussia.

The sample which we have extracted from Dr. Robertson's pamphlet is by no means the best which we could have selected; but it will, we are sure, induce a great many of our readers to peruse the whole brochure, which is equally creditable to the head and heart of its author.

Medical Report of the House of Recovery and Fever Hospital, Cork Street, Dublin, for Two Years, from 1st January, 1837; to 31st December, 1838. By *E. A. Kennedy*, M.D. President of the College of Physicians. 1839.

This Report appears to be drawn up with great care, and is calculated to give us an insight into those visitations of typhus which scourge but too frequently the sister Island. The reporter assures us:—

The extent to which fevers have frequently prevailed in Ireland has led to the establishment of hospitals for the special reception of poor persons suffering under that disease. It is stated in the Report of a Select Committee of the House of Commons, in the year 1830, that in 1817, on a moderate calculation, one million five hundred thousand persons suffered from fever in Ireland; of which number at least sixty-five thousand died.

The number of applicants for admission into the Fever Hospital for 1835 exceeded the average of some former years. The cases continued to increase in 1836, and communications were made by the Government to the physicians of the Fever Hospital, and measures for augmenting the accommodation of applicants adopted. In a report made by the physicians to the Government, we find the following passage:—

"It may, however, be stated, that the physicians have scarcely ever observed those circumstances which favour the progress of epidemic disease more strikingly exhibited than they are at present. They have frequently seen from ten to twenty individuals crowded into apartments of small dimensions, ill ventilated, filthy and offensive in the highest degree, the inmates in want of the necessaries of life, oftentimes without bed-covering, or even sufficient personal clothing."

And some can be found to wonder that the Irish are not quite satisfied. The starving and naked and famished victims of typhus should utter no sounds which may mar the mirth, or disturb the aristocratic quietism of their masters.

"In December, 1836, and for several months previous, typhoid fever predominated beyond all former observation. Among my own patients a great number of instances of unmixed typhus of the very worst description occurred, than I recollect to have seen for several previous years. The mortality also was much greater; and it is curious to observe, from a reference to my notes of the cases taken at this period, how, almost invariably, the tenth day appears to have been that on which the fatal termination of the disease took place.

In the conclusion of this month, or rather, I should say, early in January, 1837, an epidemic catarrh or influenza appeared, and prevailed so generally, that neither age, constitution, or class of individuals was exempted from the ravages of the disease; it prevailed, I think, more extensively, and the rate of mortality was greater in the higher classes of society."

"It has been questioned whether two epidemic diseases ever prevail contemporaneously in the same locality. The author can here only remark, that the one he has detailed was preceded, accompanied, and followed by typhus fever, which in intensity and in the numbers attacked, nearly equalled any which has been recorded in the history of this hospital. The same occurrence was ob-

served in the epidemic catarrh which prevailed in Ireland in 1803, as recorded by Drs. Moriarty and Patterson."

When the influenza prevailed, the fever abated somewhat of its virulence, but, as the former declined, the latter increased. It began to get a-head in March, and attained its maximum in June.

The type of fever which characterized the present epidemic, and which prevailed so generally in 1836, was the pure typhus, or what has been, not unaptly, termed adynamic typhus: delirium, great prostration of the mental and muscular power, petechiæ, black sordes on the tongue, involuntary dejections, subsultus, and tendency to sloughing being frequently present.

There was sometimes a tendency to hæmorrhage, at other times to diarrhœa, and at one period there were many cases of erysipelas and diffuse inflammation.

The duration of the fever was protracted, and relapses were by no means so frequent as has been observed by the author during the prevalence of former epidemics. There was also another peculiarity in its attacking the young in an unusually large proportion. Thus, by a reference to the table, it will be found that so large a number as 1847, under the age of fifteen, were discharged during the year; and the author has never witnessed so many cases of genuine typhus, accompanied with extensive petechial eruption, as occurred even in those under the age of five years.

"At the commencement of the epidemic, well marked crisis was not observed; but during its progress, and more particularly in private practice, where opportunities were more favorable for observation, crisis by urine was frequent: and this was so repeatedly brought to my notice, that in many cases a favorable prognosis was not formed until a deposit in the urine took place, and which occurred generally about the 14th or 16th, and in some instances so late as the 20th day. I did not consider convalescence established if this did not occur; nor was it safe to allow nutriment to some patients who had a craving for food previous to its appearance. Frequently sleep, which I consider the best crisis in fever, supervened on the occurrence of the urinary deposit.

If the frequency of crisis was not observable, the universality of petechiæ was remarkable. This circumstance is not now looked on with so much apprehension by those conversant with the fever of this country."

"I have observed, however, if the eruption is coeval with the fever, (that is, occurs on the first day, in those cases which commence *uno ictu*) that it is not a favorable symptom. Again, where the eruption re-appears and becomes vivid at the termination of fever when it had previously declined, that it frequently denotes an unfavorable issue. The practitioner should not be misled by those cases where, having found them to decline on the chest and extremities, he thinks that they have re-appeared on an examination of the back: it is the position of the patient which has retarded the evanescence of this eruption in these cases.

The variety of the eruption observable during the greater part of the year was of the rubeolous description; while in the latter part of the year 1836, the purpura variety prevailed. These latter cases on recovery I think afford a greater immunity from future attacks of fever. In both however there is less danger of relapse than in fevers of ordinary type.

During the latter part of August I met with miliary eruption in two cases: one in a female of the name of Godby, in whom it was extensively diffused over the whole body; gastric symptoms were predominant in her case.

This variety of eruption was frequent with me in the year 1826; it was mostly confined to the chest, and accompanied by diaphoresis, which was the general critical termination of the fevers of that year."

We shall pursue the author through his running notice of symptoms, and select such observations or facts as seem to possess any practical importance.

a. In many cases of fever, and these the most severe, when delirium was present, the pupils were contracted; this, although a formidable symptom and leading

the author to form an unfavorable prognosis, was yet by no means so dangerous a symptom as dilated pupils; the former occurred much oftener in those cases where there was great subsultus and picking of the bed-clothes.

The author may here remark that the contracted pupils oftener denote the paroxysm of mania than that of fever.

b. Error in diet was however not unfrequently the cause of violent delirium in the convalescent. In one case of a man named Bishop in the author's wards, an error of the nature alluded to caused a violent paroxysm of delirium, which rendered the issue of his case for many days extremely doubtful. And in the case of a gentleman mentioned to the author by his friend Mr. Wilmot, a similar irregularity occurred; delirium set in, and lasted for three months, during which period the patient made several attempts at self-destruction.

c. Deafness frequently occurred during the progress of fever; and in some convalescents remained a considerable time after their discharge from hospital; when a patient said, "I don't hear what you say, Sir," the sound was more gratifying than the expression, "I am better," the symptoms of improvement often not being so manifest in the latter as in the former case. At all times I considered deafness during fever in a more favorable light than acuteness of hearing.

d. Mania occurred in three cases—there were two instances of partial paralysis—epilepsy, apparently, in three cases.

"In some instances, epileptic convulsions are known to be suspended during an attack of fever; in confirmation of which the author begs to notice the following interesting case, which occurred to him several years since. The son of a tradesman, aged nine years, had been subject to epileptic fits from the age of two years, which latterly became more violent and frequent. During my attendance on him in severe typhus, with tendency to gangrenous sloughs, he had no return of the epileptic convulsions; and what is more remarkable that for seven years after the fever, during which period I had repeated opportunities of observing his case, he never had a renewal of an attack; and I think it more than probable that the febrile attack extinguished the previous disease."

e. The state of the pulse is recorded in three hundred and twenty-three cases. Although the author would by no means wish to supersede a careful observation of the pulse in fever; yet it must be remarked that the indications of the pulse in severe cases of typhus, are more uncertain and fallacious than in the milder cases, and more particularly in those of idiopathic fever. At an advanced stage of the more severe forms of the disease, a pulse of 120 denoted more danger than the same frequency at its commencement. In the case marked 63 in the tables, the pulse was intermittent all through the fever, while there was no such irregularity when convalescence was established. It is well known that intermission of the pulse often occurs in slight febrile attacks caused by a deranged state of the bowels.

In one case of a female in the tents, the pulse was only thirty while the respiration was thirty-seven.

Slowness of the pulse was frequently observed in an epidemic in this city noted by Dr. Rutty. It was remarked in most of those whose fever ended in a bilious purging, that the pulse from the beginning throughout the disorder was extremely slow and equal, not beating above forty times in a minute, which was not the case with those who had a diarrhœa at first.

f. To an experienced practitioner the tongue affords a more certain index as to the nature and progress of fever than any one symptom, or perhaps assemblage of symptoms; whether we regard its colour, shape, tremulous motion, or mode of protrusion among the great variety of its morbid appearances. To these remarks, however, the author might add numerous exceptions in the present epidemic; a few may be noted: a man named Johnson was admitted on the 11th day of fever, with a clean although somewhat tremulous tongue, and

died on the 13th. Andrew Doyle, violent delirium; papular petechiæ; tongue clean; death. A female of the name of Murphy was considered to be improving on the 11th day of fever, as she was found to turn on her side; her tongue clean and moist, with intellect clear; when, on the 12th day, this improvement was suddenly put a stop to by the appearance of suffused eyes; fluttering pulse; and she sunk the same evening. These, and many others which might be adduced, will show the necessity of caution in forming our judgment from the apparently favourable appearance of the tongue, when the other symptoms do not correspond.

"In elderly persons (and I have witnessed typhus gravior in many individuals of an advanced age) the tongue was found to be fuliginous; and in one gentleman, subject to the gout, the tongue appeared as if washed with ink every morning, it was so black and moist; yet the dejections did not differ from the ordinary vitiated appearance of the secretions in typhus: on recovery, a length of time elapsed ere he regained his sense of taste.

Sometimes the tongue was found to be deeply indented with fissures, both during the progress of fever and in convalescence. Morbid taste existed for several days prior to the accession of fever in many individuals. The tongue remains white in many cases for a considerable time after convalescence, and these, by inattentive observers, have been reported either relapses from, or fresh cases of fever."

g. Gangrenous ulceration of the mouth occurred in several instances. In two, the disease was arrested by the application of the nitro-muriatic acid, by means of a hair pencil to the gangrened surface with camphorated spirit applied to the cheek externally; and the exhibition of wine with sulphate of quinine. In the present epidemic, as well as in former ones, the affection occurred in cases where no mercury had been given.

h. Parotid swellings were frequent, in one or two instances arising suddenly in one night; they did not appear to be critical, or attended with danger in adults: but when they occurred in children, particularly in scarlatina, when the exanthem was imperfectly developed, the appearance of these swellings was regarded as a most unfavourable symptom. Sometimes suppuration took place, which retarded convalescence

i. Abscesses were not so frequently observed as they had been on former occasions. But the following cases are worth perusal:—

Case 1.—"A female, aged 30, was considered convalescent, when suddenly she was seized with coma and involuntary dejections; pupils dilated; her head having been shaved during the fever, a mustard cataplasm was applied to the scalp; leeches applied to the ears; and a terebinthinate enema administered. Thinking that sudden effusion on the brain had taken place, I did not calculate on finding her alive on the next day; but my surprise and gratification were extreme, when the nurse informed me that during the night a quantity of matter burst forth from the left ear, which still continued oozing on my visit. She left the hospital convalescent."

Case 2.—David Sibbald, a servant, æt. 15, was admitted on the 10th day of fever, with petechiæ; sordes on the tongue; delirium during the progress of the disease. An extensive slough formed on the sacrum, notwithstanding the most unremitting attention; indeed the tendency to gangrene was remarkable in his case, the scapular, the dorsal, and iliac regions, even the legs exhibiting marks of discoloration; on the 16th day of his illness the pupils were observed to be dilated, and insensible to the stimulus of strong light; this state continued for a week, at the expiration of which, suddenly a large quantity of pus issued from the ear, when some degree of consciousness returned, as he made an attempt to protrude the tongue when required to do so. The emaciation in

his case was extreme; he left the hospital at the expiration of thirty-three days; several months elapsed, however, before he regained strength sufficient to undertake the most trifling duties of his situation.

Case 3.—A man, during a protracted fever, was suddenly attacked with symptoms of laryngitis; on the application of leeches and a blister on the throat, he thought himself relieved: but the relief was conjectured to have arisen from the discharge of an abscess in the vicinity of the glottis, as he threw up a quantity of matter. As the convalescence of fever became established, the laryngeal symptoms continued. Although on a careful examination of the chest, no disease of the lungs could be detected, yet, from the emaciated and feeble state of the patient, it was on consultation deemed unadvisable to perform tracheotomy with a view of relieving the laryngeal disease; mercury was therefore cautiously exhibited, but without any alleviation of the symptoms. He died on the end of the thirty-fifth day from his admission. On post-mortem examination the lungs were healthy, but an ulcer was found in the left rima glottidis.

Case 4.—"I was requested to assist a medical friend in the examination of an individual, who, he informed me, had died in consequence of pericarditis in combination with fever then prevalent. On opening the thorax a quantity of matter was found lying on the pericardium, which on careful examination was discovered to proceed from an abscess formed under the fascia of the neck, and which made its way behind the sternum into the mediastinum. Although this rare and very unusual occurrence may not have been the immediate cause of the disease, which in this case proved fatal, yet it will show the necessity of constant vigilance in fever, in order that we may be able to detect the formation of matter in situations where prompt measures are required to remove impending danger."

j. Pulmonary hæmorrhage was rife in May and June. This hæmorrhagic tendency, says our author, occurring at one period rather than at another, is important to note, as it points to a caution in the employment of the lancet, or more especially in the employment of leeches in individuals so circumstanced; for when it exists, it is difficult to arrest the hæmorrhage.

k. The author, on this as well as on former occasions, had taken considerable pains in endeavouring to ascertain the latent period of fever, which, from many causes, differs much in different individuals. In many instances the disease commenced as it were *uno ictu;* while, in the vast majority, a period elapsed from six days to eight weeks; the longer term being more frequently observed in the upper orders of society. From numerous facts presented to him, the author is of opinion that the cases in which the disease develops itself rapidly and with energy, are generally the most formidable and attended with danger: but the longer the latent period of fever, the more complicated the disease has appeared to him, and more difficult in the management.

l. The fever chiefly pervaded the lower classes of society. But a good many domestic servants were attacked. A hint to the rich to subscribe to fever hospitals, and, we may add, to a poor-law.

m. With respect to the practice pursued during the past year, the author seldom had occasion to employ general blood-letting; the application of leeches to the head, with tepid sponging; and cupping when the chest was engaged, having proved sufficient in numerous instances to moderate the symptoms. In some of the cases of diarrhœa, which occurred in the progress of fever and during convalescence, the application of a few leeches to the umbilical region was found beneficial. Blisters were applied where a tendency to coma appeared; they were injurious, however, in those cases where great irritability of fibre existed; and in many cases sent to hospital, when epispastics had been applied

on the complaint of head-ache, their application proved a more positive injury than a large depletion. Opium was prescribed in the form of Dover's powder, in cases of typhus complicated with the different shades of delirium tremens; and in cases where great excitability existed with pervigilium for two or three nights in succession, a full anodyne was given, having premised depletion by the application of leeches to the temples. There is no remedy, in the author's opinion, which requires more discriminative observation than the employment of opium in the treatment of fever. Wine has been freely used during this epidemic; the average quantity prescribed by the author and his colleagues seldom exceeded eight ounces in the twenty-four hours. It has been justly remarked that wine is sometimes a better hypnotic than opium. An illustration of the type of fever is afforded by the quantity of wine consumed in one month compared with the corresponding month in 1838; thus, in June, 1837, the quantity of wine consumed was 4562 ounces; while in the same month, 1838, the quantity was only 1352 ounces.

n. "With respect to the pathology of this epidemic, the writer regrets that his researches do not enable him to throw any light upon the darkness in which the pathology of fever is involved. The only post-mortem appearance that was at all constant, was congestion of the vessels of the membranes of the brain. But not only was this not invariable, but it is so frequently found in every form of death where the agony is prolonged, that there can be no necessary connexion between it and the symptoms of typhus fever. In many cases it was accompanied by sub-arachnoid effusion, which was sometimes a limpid serous fluid; sometimes a layer of an opaque whitish gelatinous matter.

But if this epidemic typhus was not characterised by any uniform or constant pathological changes, it was very remarkable for the almost total absence of those abdominal lesions, which have been regarded by some as the invariable attendant of typhus fever. Indeed, in this respect, this epidemic affords a striking and conclusive refutation of the false and hasty generalizations of the French pathologists on this subject. In this respect also it differs altogether from the epidemic fever of 1826, (which the writer had an ample opportunity of investigating, while in charge of fever patients supported at the expense of the government at the Meath Hospital that year,) in which, in a large proportion of the post mortem examinations made by him, more or less disease of the glands of Peyer was found."

o. Our Author appends a Table of Monthly Returns of the Admissions, Discharges, and Deaths of Fever Patients in the several Hospitals, Dublin: distinguishing the sexes; from 1st January to 31st December, 1837.

"This table exhibits a complete view of the rise, progress, decline, and intensity of the Fever of 1837 in this city.

It appears from it that, in that year, 11,085 fever patients were admitted into the Dublin Hospitals. Of these, 4,648 were admitted during April, May, June, and July, the period when the epidemic was at its height; and of the remaining 6,437, admitted in the eight other months, 1,030 were admitted in January, when the influenza prevailed.

The total number of deaths was 1,103, giving an average mortality of one in every 10 1-10th.

The relative number of males and females attacked, as well as the relative mortality of the two sexes, as exhibited in this table, is very remarkable and well worthy of attention. The number of males admitted to hospital was only 4,986; whereas of females there were 6,099. The total mortality of the males was 1 in every 8¼, while of the females it was only 1 in every 12½; or,

In the males the mortality was - - - 12½ per cent.
In the females - - - - - - 8¼ do.

The relative mortality of the different hospitals, as shewn by this table, is a circumstance highly deserving attention, as well on account of the differences as

of the agreements amongst them in this respect. Thus, while the mortality at the Hardwicke, Dun's, and the Meath Hospital, was so high as 1 death in every seven ; in Steevens's and the House of Recovery it did not exceed 1 in every 12.

There is no point in the history of fever respecting which we have more conflicting statements than this of the mortality in hospitals. It is usually supposed to depend on a great variety of circumstances, over which the physician has little or no control ; such as, the extent of accommodation in proportion to the number ; the facility or difficulty of admission into hospital ; the ages to which admission is restricted ; the character of the prevailing epidemic, and the period of its duration at which the observations are made. It seems, however, probable from the discrepancies as well as the coincidences in the rate of mortality in the Dublin Hospitals during the same epidemic, observed in the same periods of its progress, that this depends on fewer and more general causes than is commonly imagined. This view receives remarkable support from a consideration of the rate of mortality in the tents at the House of Recovery, Cork-street, as exhibited in the table. In these the patients were placed in apparently the same circumstances, and exposed to the same influences throughout the whole course of the epidemic ; yet, nothing can be more variable than the mortality. Thus we find in May, 1 death only in every 12 ; in June, 1 in every 7 ; while in August, we have only 1 in every 19. That this did not depend on any variation in the nature of the epidemic itself appears in the highest degree probable, from a comparison of the rate of mortality in the tents and in the adjoining hospital. Thus in June, when the deaths in the tents amounted to 1 in every 7, the mortality in the house was so small as 1 in every 15.5."

And Dr. Kennedy adds :—

From an examination of these tables it appears that in this epidemic the greatest number of attacks occurred from the age of 10 to 15 years for the males, when the proportion is about 18 per cent. ; and from the age of 15 to 20 for the females, when the proportion is nearly 16 per cent.

The number of females at every age previous to 70 exceeded the number of males.

The number of females under 20 years of age is	1,588
And of males	1,376
Excess of females under 20	212 or

a little more than 7 per cent.

In the Glasgow Fever Hospital, from October, 1835, to November, 1836, this excess was found to be above 8½ per cent. ; and, as Dr. Cowan has observed, this fact should be kept in view, as it has an important bearing on the relative mortality of the sexes.

The number of both sexes from the age of 15 to that of 30 years was 2,628, or 42½ per cent.

The number under the age of 30 years was 4,517, or 73 per cent.

After the age of 45 the numbers rapidly diminished. Of the 6,724 cases computed in this table, 5,962 were under 45 years of age, and only 762 above it, being about 88 per cent. for the former, and 11 per cent. for the latter.

In viewing this table in reference to the *mortality* in fever, the first thing that strikes one is the great difference in this respect between the sexes : thus, while the total mortality of the males is 1 in 9½, that of the females is only 1 in 15.

At almost every period of life comprised in the table, the mortality of the males from fever exceeds that of the females. In the earliest period of life, up to 5 years, the difference in this respect is not striking. After this age it increases until at 20 the deaths amongst the males are 1 in every 16, while amongst the females they are only 1 in every 42. From 20 to 25 the numbers

are again nearly equal; but from 25 to 40 the deaths are nearly twice as numerous amongst the males as the females, after which to 55 the difference becomes still greater—the proportion for the males being 1 in 3, for the females nearly 1 in 11. From this time to the 80th year the mortality is nearly the same in both.

The rate of mortality is greatest both in males and females at 60.

Looking to the total number of deaths at different ages, it would appear that the mortality in fever is considerable up to 5 years of age, from which to 15 it is remarkably small, after which it increases, and goes on almost steadily augmenting up to 60.

We have taken out most of the important passages from this Report, and presented them to our readers. Of the Report itself we would speak in high terms. It forms a valuable pendant to that of Dr. Cowan, of Glasgow, and deserves, like *it*, to be studied. The subject of epidemic typhus begins to claim serious attention, even in London, and the body of practitioners should be in possession of the facts connected with it.

NEW EDITIONS OF STANDARD WORKS.

I. PRACTICAL SURGERY; with One Hundred and Thirty Engravings on Wood. By *Robert Liston*. Second Edition.

MR. LISTON informs us:—

"A Second Edition having been already called for, the letter-press has been revised and corrected with care. Various alterations and additions have been made, and a few new wood-cuts added; some have also been engraved anew, in place of such as did not exhibit the subjects distinctly. These improvements, it is hoped, may render the work both more useful to surgical pupils, and more deserving the patronage of the profession at large."

The short time which has elapsed since the publication of the first edition of this work, is sufficient evidence of the estimation in which it is held. It is the first original treatise on operative surgery, at least of any importance, which has been brought out in this country. Our other manuals have been avowedly or really taken from the French, and differ in many respects from the present. This gives us the results of Mr. Liston's experience, which may be safely admitted to have been considerable, and to possess strong claims on our attention.

It would be absurd to attempt an analysis of a book, which is in a great degree elementary, and which is in the hands of so many surgeons. We cannot, however, resist extracting, for the sake of those who have it not, some of the valuable suggestions which abound in it. Of course, we must dispense with any think like connected order in our quotations.

Necessity of Studying the Art of Operating.

We agree with Mr. Liston that it is the bounden duty of every one engaging in the practice of our profession, in addition to a correct knowledge of the *science of surgery*, the causes, symptoms, and consequences of disease, the signs of injuries, the morbid changes in the tissues involved, to make, moreover, the *art of operating* the subject of most careful and diligent study. And probably he is not far wrong when he observes:—

The art of operating has, even by many of those in prominent situations, been too lightly considered, and too little practised on the dead body. The foundation of the study of the art of operating must be laid in the dissecting-room, and it is only when we have acquired dexterity on the dead subject, that we can

be justified in interfering with the living. Many poor creatures have been sacrificed in consequence of the ignorance, carelessness, and self-sufficiency even of scientific professors, who have either despised or neglected the study of surgical anatomy, the considerations of what may arise during this or the other operation, and the due education of their fingers. The infliction of unnecessary pain, through want of adroitness in the use of instruments, by protraction of any proceeding, the hazarding in the slightest degree the safety of any one who puts confidence in us, who trusts us with his life, or of one who, as in public practice, is, as it were, by chance, and without the means of appeal, thrown into our hands, cannot by any means be palliated or defended—it is, in point of fact, highly criminal.

Dressing of Wounds.

"A sort of routine practice has been long pursued in dressing wounds. They are put together without delay, and their edges squeezed into apposition and retained so by various means, such as sutures, plasters, compresses, and bandages. They are carefully covered up and concealed from our view for a certain number of days. Then the envelopes of cotton and flannel, the compress cloths, the pledgets of healing ointment, and plasters are taken away, loaded with putrid exhalations, and a profusion of bloody, ill-digested, fætid matter. A basin is forthwith held under the injured part, and the exposed and tender surface is deluged with water from a sponge, and then well squeezed and wiped. Then comes a re-application of retentive bandage, of the plaster, of the grease mixed with drying powder, all surmounted by some absorbent stuff, as charpie or tow, to soak up the discharge. This is not unaccompanied by pain, often more complained of than that attendant upon the original injury or operation. This process is repeated day after day, the patient is kept in a state of constant excitement, and often, worn out by suffering, discharge and hectic fever, falls a victim to the practice. It would here serve no purpose to detail the mode of cutting the plasters, and of spreading the pledgets; nor would there be any use in giving an opinion as to whether a mixture of the earth called armenian bole, or the impure oxyde of zinc, the tutty or calamine, was the best ingredient to put into the digestive, drying, healing unguents, or as to whether they should be compounded of one kind of animal fat and vegetable oil, or another; nor would any good come of stating how the soiled bandages and filthy straps are to be removed, whether they are to be cut off or removed first from one end and then from the other. The system is a bad one, the applications filthy and abominable; the whole proceding outrages nature and common sense. The wound is, as it were, put in a forcing-bed; excited action, beyond what is required, is hurried on, and the consequence is, that union seldom, if ever, can or does take place. A suppurating surface, on the contrary, with profuse discharge, and a very tedious cure, if any, is obtained."

This is strong language, but perhaps it is not altogether unwarrantable. There can be no doubt of the existence, indeed the prevalence of the evil that Mr. Liston reprobates; but, perhaps, he carries his horror of all dressings save water rather far. With the utmost love for the pure element, we are disposed to hesitate before we subscribe to the oath of the surgical tea-totalers.

Mr. Liston's method of dressing —Surfaces are not disposed to unite for many hours after the division and separation have occurred. So long as oozing continues, there is no good end to be achieved by their close apposition. It is only when reaction has occurred, when the vascular excitement around the solution of continuity has taken place, and the circulation has been roused, when plastic matter begins to be secreted and thrown out, that the process can be expected to commence. The edges of a large wound, as that resulting from amputation of the extremities, may be approximated in part so soon as the bleeding from the principal vessels and larger branches has been arrested. But

the close apposition, and the application of all the retentive means, had better be delayed for six or eight hours at least. In the interval, extreme sensibility of the injured parts may be abated, the oozing moderated, and the chance of secondary hæmorrhage much diminished, by covering the parts with lint dipped in cold water, and frequently renewed; or, as after any of the greater amputations, for instance, a piece of lint may be placed betwixt the flaps, and a constant irrigation of the exposed surface kept up for some time by threads passing from a vessel containing cold water. This practice is the best that can be resorted to also in accidental wounds, those of the incised kind, that are fresh, and bleed freely. In these last, after hæmorrhage has entirely ceased, applications of an agreeable warmth should be substituted, such as poultice of bread and water, or, what is much to be preferred for its simplicity, lint of thick texture, and of sufficient size to cover the wound, soaked in tepid water, and that overlaid with an ample piece of oiled silk, to prevent evaporation. Heat and moisture, by which qualities a poultice produces its soothing and beneficial effects, by which the surface is relaxed, its capillary circulation encouraged, and discharge promoted, are thus amply afforded, without any of the weight, putrefactive fermentation, stench and filth, which is inseparable even from the best and most scientifically contrived epithems and cataplasms; of course the approximating such wounds is effected, as much as possible, by position, and by the same means the return of blood is favoured, and engorgement of the vessels and inflammatory swelling prevented in a very great degree.

He goes on to observe:—

"As the solution of continuity is filled up, the edges are approximated, and during the cicatrisation the same means must be persevered in, in order to promote the process. Support may be given in some stages of the cure by bandage, and occasionally by plasters; care must, however, be taken that this is not partial. It is seldom, indeed, that any good is seen to arise out of the drawing together by plasters of the edges of a recent solution of continuity, during the process of granulation and cicatrisation. The contraction of the part takes place naturally, and generally with sufficient rapidity. It is often retarded by the means which are foolishly employed to hurry it on. The granulations are absorbed, the surface of the sore becomes foul, the discharge thin and offensive, and if the plan is persevered in, inflammation of the surrounding skin will follow, with extension of the sore by ulcerative absorption. There is a period, however, at which the edges of a solution of continuity in a state of suppuration may sometimes be approximated and retained with every prospect of abridging the cure, provided the surrounding parts are in a sufficiently lax state; viz. when the discharge begins to thicken and diminish in quantity, when the granulations are florid, small, and acuminated; then, indeed, rapid adhesion often takes place."

We must say that we think Mr. Liston rather underrates the effects of judicious strapping, as well as of stimulating applications. Of course both the one and the other may be abused as well as mismanaged. But, properly employed, they do appear to be not altogether useless.

Our author proceeds:—

"When the coverings have been smoothly and cleverly cut, and in the direction of the fibres, when there is an abundance of these as regards the deeper parts, then, after the surface has become glazed, (the vessels having been tied, and the cold water assiduously applied for some hours,) the surrounding skin previously shaved, is made thoroughly dry; coagula are removed, the edges are put carefully and neatly into contact, and retained by narrow slips of adhesive plaster placed at intervals; that commonly used is not well suited for the purpose; it does not retain its hold sufficiently long; it is loosened by discharge, it heats the surface and often gives rise to erythema. For many years a better sort of plaster has been used very successfully by me and some of my colleagues

in the Royal Infirmary of Edinburgh, and in the North London Hospital, as well as in private practice. It is composed of a solution of isinglass in spirit, and may be spread for use, as occasion requires, on slips of oiled silk; on silk glazed on one side only, and on the unglazed side. But this plaster can now be had, ready for use, admirably prepared by Messrs. Fisher and Toller, Conduit Street. It is cut into strips of the desired breadth, and the adhesive matter dissolved immediately before it is employed by the application of a hot moist sponge. This composition becomes sufficiently adherent; it keeps its hold often to the end of the cure, and it is quite unirritating. Being transparent, the plaster does not prevent any untoward process that may be going on underneath from being observed, and if any fluid collects, an opening can be snipped for its escape. If, as may be often deemed necessary, a few points of suture have been made, these can be removed by cutting the thread shortly after the fixing of the plasters, and within twenty-four hours. No other dressing need be employed in the first instance—no compress, no pledget, no bandage. These applications may give rise to unpleasant effects, they are not wanted, and do no good; they in no way promote the object in view, viz. the union of the wound, and the cure of the patient at the end of eight or ten days. A roller may be applied in a few days after some amputations, in order to encourage the subsidence of any slight œdema that may have arisen, and to bring the stump into a nice form. At an earlier period, the use of any dressing whatever is productive of pain; it heats the part, and encourages discharge of blood and formation of matter. The discharge that does take place in the light and simple mode of managing wounds here recommended, is wiped from the surrounding skin, as it flows out, and from the taffeta or glazed cloth on which the part lies."

The isinglass plaister, to which Mr. Liston alludes, is certainly a very excellent application. Its introduction into use must be considered an improvement.

Division of the Lateral Ligament for Dislocation of a Phalanx.

Mr. Liston observes:—

The reduction of luxation of the proximal phalanx of the thumb, on the posterior aspect of the metacarpal bones, has occasionally been found puzzling enough, and it is never accomplished without some little trouble. This difficulty has been attributed to the action of the short flexor, and to the tight embrace of the lateral ligament round the neck of the bone. By making the extension across the palm of the hand, the one obstacle is done away with; but the strength and rigidity of the ligaments are not in general easily overcome. Before the reduction has been effected, it has been found necessary to divide one of the ligaments; the external is most easily reached and cut across by the introduction of a narrow-bladed knife (such a one as is used by some practitioners of surgery for exploring tumours) through the skin at some distance, and by directing its edge against the resisting part.

In the "Elements of Surgery" I have related one case of a very old man, much intoxicated, in which it was found absolutely necessary to perform this operation before the reduction could be accomplished; and shortly before giving up the charge of the Edinburgh Hospital, a lad, under fifteen years of age, was admitted with luxation of this joint of fourteen days' duration. In his case it was impossible to effect the replacement until the ligament had been divided. He returned within a week, having again fallen and displaced the bones. The reduction was on the second occasion made readily enough.

Our author does not appear to be aware of the influence of the glenoid ligament in preventing the reduction of the dislocation of the distal end of the metacarpal bone or phalanx on the palmar surface of the proximal end of the phalanx in connexion with it. That operates more powerfully, from its anatomical construction, than the lateral ligaments, indeed the latter being partially implanted into the former they co-operate in occasioning the difficulty. The

division of the lateral ligament cannot be altogether free from hazard, and perhaps it would be better to avoid it in persons of an irritable, or of otherwise a bad habit of body.

The Gum Splint for Diseased Joints.

A variety of methods have lately been resorted to for insuring the quietude of diseased joints. Every body knows the old paste-board splint—now we have the undressed leather splint—and the white of an egg splint—and the gum splint —and a dozen more. The following is Mr. Liston's description of a gum splint.

A splint, similar to that used by the old surgeons, composed of some soft substance, as tow and albumen, described by Scultetus, (and delineated by him even to the eggs on a platter,) is applied; we use coarse soft lint soaked in a strong solution of gum acacia; it is laid on in strips over the side and pelvis, from the short ribs to the knee, and made to embrace the limb fully. A layer of dry lint is first applied, and then two or three others, soaked in the mucilage, follow; this is covered by a fold or two of coarse calico, and the whole is retained by a roller. In cases where the limb has been retained for a long period adducted and bent, and where some little trouble and uneasiness have arisen in placing it in a favourable position, it will be advisable to preserve it so by the use of the thigh-splint, as for fracture, during some twenty or twenty-four hours, until the composition dries, and the splint has adapted itself closely to the parts.

The gum splint can be made of any form, so as to allow of its being taken off, trimmed, and lined with wash-leather, or protected with a layer of oil-silk and re-applied with a clean bandage. It can also be fashioned so as to leave any part exposed, in order to admit of dressings; the discharge from issues and abscesses can thus be allowed to escape, and the parts attended to without disturbing the limb. Two splints can be formed instead of one; in fact, the apparatus can be varied as circumstances demand, and it is applicable in a great variety of cases, and to any articulation. A perfect mould is formed of the part, and this can be applied with any degree of tightness that is suitable and comfortable to the patient.

Removal of the Sterno-mastoid Muscle.

"I had once occasion to remove the sterno-mastoid muscle of one side, involved in a sarcomatous tumour from its origin to its insertion; the most fastidious critic will not refuse the term sarcoma to this morbid growth, though, in all probability, the muscular fibres may have been involved secondarily. The tumour was limited by a cellular sheath, yet the dissection was difficult and extensive. The patient made a good recovery, and no mal-position of the head followed. The trapezius, probably, of the opposite side had done the duty of the diseased muscle for a considerable time before its removal."

Ligature of the Carotid, prior to operations on the Jaws, &c. unnecessary.

"The operation has been resorted to, in order to arrest the growth of tumours of the face and jaws, for which purpose it must be ineffectual; and it has also been performed as a preliminary step to the removal of such diseases. The suffering of the patient is thus much prolonged, without his safety being at all enhanced, or the dissection of the tumour in any way facilitated. The flow of blood is quite as effectually commanded by pressure with the fingers on the common carotid of the affected side; pressure on both at the same time has given rise to the most alarming convulsive movements in some cases, after great loss of blood had occurred. Even pressure on one trunk is not demanded in many of the operations in question. I have, I believe, had fully as much experience in the management of tumours of the mouth and jaws, and of the face and neck, as any surgeon in this or any other country, and have never seen occasion to tie

the carotid previous to or during the operations for their removal. I have never regretted omitting this supposed precautionary measure."

Is temporal arteriotomy preferable to cupping? "The propriety of taking away blood from this vessel in particular cases, in preference to abstracting it from the general mass of circulating fluid by opening a vein, cannot be discussed here; as a mode of local bleeding, it is certainly to be preferred to the scarification and cupping of the temples. This last is more painful, and produces deformity; the same troublesome consequences, besides, result occasionally as from arteriotomy. It is not long since I assisted my colleague, Mr. S. Cooper, in operating on a case of aneurysm of the anterior branch of the temporal, consequent upon the application of the cupping-scarificator."

We do not feel quite disposed to go with Mr. Liston here. So far as we have seen, if bad consequences follow cupping once, they succeed arteriotomy twice or thrice. Cupping is, we think, the *least* painful. Cupping entails no pressure or fall afterwards. And cupping, after all, in many cases, is the most effectual.

A Case of Spontaneous Aneurysm of the Brachial, at the Bend of the Arm.—"Disease of the coats of the arteries of the upper extremity, to a great extent, is not common, and very few cases of true aneurysm lower than the axilla are met with or mentioned in surgical works. The surgeon will accordingly seldom be called upon to perform any operation for spontaneous aneurysm (aneurysm from disease of the coats) at the bend of the arm. I have treated but one such case in the person of an old ship's carpenter. Whilst at work as usual, he felt something snap in his arm, a pulsating tumour was soon after noticed, and before I was asked to see him by Mr. Cheyne of Leith, it had attained, during four months, fully the size of a hen's egg, and was evidently in part made up of solid matter. The brachial was tied, and every thing went on favourably."

Aneurysm of the Radial Artery in the Palm, cured by Ligature of the Radial and the Ulnar.—This case was communicated to Mr. Liston by Mr. Pilcher, the operator.

"A working goldsmith, about forty years of age, of a gouty diathesis, had a tumour formed beneath the ball of the right thumb; it was mistaken for an abscess; on careful examination, I discovered it to be an aneurysm, and believed it to be situated between the abductor pollicis and abductor indicis, and to be a disease of the radial artery at its terminal division, probably induced by the repeated, though slight, blows from the handle of the hammer, which his occupation constantly obliged him to use. I proposed to tie the radial and ulnar arteries immediately above the wrist, provided the ligature around the radial was ineffective in diminishing the tumor and arresting its pulsation. My expectations were realized; the closure of the radial artery was attended with diminution in the size and pulsation of the tumour, but still both remained to rather less than half the previous degree. I immediately tied the ulnar, when the tumour was much reduced in size, and the pulsation completely; slight secondary hæmorrhage occurred from one of the arteries at the seat of the ligature two or three days after the operation, which was arrested by cold water; the case progressed without any further untoward symptom, and was attended with a perfect cure."

New Noses.—Mr. Liston speaks very warmly in favour of this branch of art. There can be no doubt of the advantage of a good nose. It is almost, of itself, a passport to society. As the song says,

"Although 'tis confess'd that the prejudice goes
Very much in favour of wearing a nose,
Yet a nose shouldn't look like a snout."

Much less should a nose be wanting altogether. Mr. Liston protests:—

"Were those who seem to despise the repairing of such deformity by surgical interference, holding it as a frivolity and little better than operative quackery, to witness the utter wretchedness of the mutilated object, and how eagerly he would cling to any hope, however slender, of bettering his condition, prejudice against rhino-plastics ought rapidly to thaw before the warmth of aroused feelings of humanity. If not, put the scoffer in the place of the patient,—let him lose his nose, reputably or otherwise, allow him some weeks of consequent misery and degradation, then bring him in contact with a skilful and dexterous surgeon, who despises no part of his professional practice that is to benefit his fellow-creatures, and thinks it not beneath him to make noses as well as stumps, and there can be little doubt that ere long the rhino-plastic art will have obtained an addition to the list of its supporters, of a sure and zealous proselyte."

Certainly the Chapter on new noses, (which by the bye beats Sterne on noses all to sticks) is well adapted to serve the nasal cause, for it gives an excellent account of the history and method of making noses, Roman, Greek, or Pug. Mr. Liston, indeed, is modest. He disclaims classical noses.

"If properly constructed, though not in accordance with either the Roman or Grecian contour, as their predecessors may have been, still they are noses to do well in the world, They are literally very passable noses; for many have I known to pass those of my own making, without remarking any thing particular in the features of the wearers. And surely none can deny that the worst made nose is infinitely superior to the horrid cavern which previously struck the passer-by with pity and disgust. As a fair sample of the manufacture, I annex representations of my first case, before and after operation."

For the mode of carving the nose we must refer to the work itself, which affords very ample and very satisfactory information. We extract only the concluding observations:—

In all these operations on the face, there is no inconsiderable risk of erysipelas; and the surgeon must not only be on his guard against this untoward occurrence, but be prepared to treat it actively. To prevent it, as well as to promote adhesion, the wounds, as has already been stated, are brought together simply by suture, all heating and heavy dressings are avoided, and the sutures are cut out as soon as they can possibly be dispensed with. Notwithstanding these precautions and attention to the state of the system, particularly in securing healthy action in the primæ viæ, should erysipelas occur, besides the usual constitutional treatment, blood must be taken freely from the transplanted part, and its neighbourhood, by punctures. If the attack be mild, it will yield to this treatment; but if infiltration be going on, or even threatened, recourse must be had at once to free incision, not only in the neighbourhood of the transplanted part, but in that part itself. At this the surgeon must not hesitate; for there is no risk, under the circumstances, of the vitality being lost in consequence of even very free incision; and it is now well known that wounds in the transplanted parts heal with more rapidity than in the original formations. The incisions should be made at an early period of the accession, it being of the utmost importance to cut the disease short; for erysipelas, so induced, not only interferes with the process of adhesion, and endangers either partial or total sloughing of the part, but, as experience has shown, may terminate fatally.

Mode of removing Encysted Tumors.—No dissection is required for the removal of these encysted tumors of the scalp, unless indeed they have obtained an enormous size, and, from long residence and other causes, adhere firmly. In general, when the swelling is about the size of a filbert compressed, or even the bulk of a chestnut, it can be taken out, and lifted, as it were, by the forceps from its bed of fine cellular tissue upon merely dividing the super-imposed scalp. The least painful and most expeditious mode is to transfix the tumor with a

narrow bladed knife in the direction of the fibres, with the back of the instrument directed towards, the cranium, and to divide thus at once the cyst and skin by cutting outwards, a little of the hair having been previously clipped off the swelling. The edges of the incision are now slightly separated with the forefinger and thumb of the left hand, and the common dissecting forceps (an instrument seldom well made) used for seizing the edge of the cyst and extracting it. The few drops of blood that escaped are wiped up, and no dressing whatever need be applied; some five or six tumors may thus be removed, without much pain to the patient, at one sitting. Sometimes a small clot fills the cavity, and may require being squeezed out a few days after the operation. When the tumor is very small, a slightly curved sharp-pointed knife, the edge on the concave aspect, will be found to answer best. Unless the tumor has attained an enormous size, and has adhered firmly, no portion of the skin should be removed.

Encysted tumors about the forehead and eyebrows are seldom permitted to attain any large size, but their adhesions are generally firm, and prove troublesome; dissection is sometimes required in their removal. The difficulty will be much obviated by making the first incision sufficiently free. The cyst is thus fully exposed, and may be removed unopened. These tumors contain curdy or sebaceous matter, with hairs. These are loose, or are seen springing from the inner surface of the bag. The extirpation of such tumors must be clean and perfect, otherwise the secretion is continued, and, as a consequence, there is reproduction of the disease, or else a fistulous opening continues furnishing thin gleety discharge, and only got rid of by incision and removal of the remnant of the secreting surface.

Encysted and Solid Tumors of the Eyelids.—Mr. Liston's account of these is not bad:—Solid and encisted tumors are frequently met with about the eyelids; the former generally grow from the conjunctival surface, the latter are situated betwixt the two layers, and often seen to be developed in the substance of the cartilage. The solid tumor may be fully exposed by everting the eyelid; it is seized with a fine hook or forceps and dissected off, along with the portion of mucous membrane from which it proceeds. Some care will be required in removing such tumors growing from the inner corner, (encanthis,) if they have attained considerable size, in order to avoid interference with any part of the apparatus for conveying away the secretions. The cysts in the eyelids generally contain a glairy fluid, they are thin and very adherent, they attain a considerable size, as regards the part in which they are situated, and occasion deformity and inconvenience; the skin is projected and often discoloured; sometimes more than one exists in the same eyelid. They occur equally in the lower and upper lid, perhaps most frequently in the latter. There is no possibility of dissecting out the cyst entire, and, in attempts to do so, a perforation has been made through both skin and conjunctiva without the object having been accomplished. The correct and effectual procedure is, after everting the eyelid, (and this can be done perfectly well, after some little practice, as with the view of attacking granulations on the surface of the upper lid, or removing foreign bodies, by a dexterous application of the fingers, and without the aid of a probe or other instrument,) and exposing the little projection within, to open this pretty freely with the point of a fine knife, a crucial incision may be made if the cyst be large, the contents escape, and the bleeding is allowed to cease. The cavity is completely cleared, and the sac disturbed and lacerated by turning about a sharp-pointed probe in its cavity. If a thorough and radical cure is desired, it will be advisable to take more effectual means for the obliteration of the cavity, and for this purpose a small pointed piece of the potassa fusa may be introduced into it for an instant. This must be done with great caution, the melting caustic being washed away with a bit of lint dipped in vinegar and

water, and the bulb of the eye afterwards protected for a short time by the interposition of a small slip of lint, or old linen, smeared with oil, or some mild liniment or ointment. The safest and best mode of applying the caustic is with a very small hollow ball probe.

Plugging the Posterior Nares.—This is easily effected by the introduction of a ligature from the mouth forwards into the nostril; a loop of silver or other wire will answer as well as any of the complicated instruments sold for the purpose of conveying the ligature. This is passed along the floor of the nostril from before backwards; it is seen and laid hold of by the fingers, or blunt hook, or forceps, in the pharynx, and brought forward; to this is attached a strong thread ligature, which is drawn into the passage by the removal of the wire. To the middle of the ligature, a piece of lint, the bulk of the first joint of the thumb, larger or smaller, according to the size and sex of the patient, is attached in a noose. This is conducted by the finger behind the velum, and pulled firmly into the cavity. The anterior opening is then plugged with lint also. The dossil is easily removed in a day or two, after washing out the coagula, by pulling at the string and assisting in its dislodgement, by the introduction, from before, of a strong blunt probe. It is seldom necessary to adopt this proceeding after operations for polypus; but it may be, and is occasionally, required for the arrestment of spontaneous epistaxis, after all other means, local and general, have failed.

We have found a common gum catheter answer better than a loop of wire, as a means of carrying the string from the posterior nares outwards. It is more flexible and gives less uneasiness.

Excision of the Tonsils.

Mr. Liston very properly reprobates the ligature. He recommends excision, and performs it so:—the patient is placed opposite a strong light, the surgeon depresses the tongue with the fore-finger of one hand, and seizes the body of the gland with the vulsellum held in the other. He then introduces the narrow, straight, blunt-pointed knife, which he has held in readiness betwixt his lips, with its edge directed upwards under the gland, and, by a few gentle sawing motions, severs it on a level with the folds of the velum. The instruments, knife, or vulsellum, must be held in the right or left hand, according to the side operated upon. Immediate relief follows this proceeding; it is not by any means so painful as the removal of a tooth, and is not attended with greater loss of blood.

Mr. Liston makes no mention of a very good instrument invented by Dr. Warren, and brought by him to England. We have succeeded in two instances in gradually getting rid of a superabundance of tonsils by (we think) Mr. Cusack's method. It consists in applying a stick of lunar caustic to the tonsils, and pressing it firmly against the gland for a minute or two. A succession of small sloughs is thus produced, which removes the unnecessary portion of gland without pain or any sort of inconvenience. Excision is often no joke in children.

Foreign Bodies in the Nostrils.

Foreign substances are often lodged deeply in the nasal fossæ of children, more especially in the fissure betwixt the anterior and posterior cavities, such as seeds, kernels of fruit, glass beads, &c., and they, often enough, are impacted more firmly by awkward and ill-directed efforts to remove them by forceps. The membrane swells and becomes soon tender. The foreign body may absorb moisture and increase in size, and the difficulty of getting rid of it is thus much increased. At any period, by placing a small bent scoop or curette behind the substance, it can be readily enough dislodged; it may slip into the throat, but

generally it can be made to appear at the anterior opening. The patient must be firmly secured and a good light chosen : the extraction can then be effected without much pain or trouble ; his struggles and screams are disregarded, for the object must be accomplished in the first instance. The difficulties are all increased by delay and repeated futile attempts.

Foreign Bodies in the Œsophagus.

Small sharp substances, as pins, needles, fish-bones, are generally fixed in the mucous membrane, over the root of the tongue, by the base of the arches of the velum, and within reach of the finger ; they can generally be disentangled and removed by the skilful use of a pair of long and slightly-bent forceps guided by the finger. Foreign matters, of large size, impacted in the narrow part of the canal, can be, if of soft consistence, pushed down by the introduction of a probang, a small bit of sponge, or what is better, a small ovoid and smooth piece of ivory, firmly secured on a whalebone rod. In introducing this instrument, the head and face are so placed, well held back, that the canal is brought pretty much into a straight line. The patient is desired to make an effort to swallow as the ball is passed over the root of the tongue ; it is thus easily slid over the epiglottis, and enters the gullet. The pressure must be very gentle on the obstructed part. If the passage has been previously constricted, a smaller instrument of the same kind may be tried, or an œsophagus bougie substituted. Hard and angular bodies must be brought upwards, and for the purpose of seizing these, long, bent forceps, one pair made to open laterally, another from behind forwards, will be required to insure a successful issue to the attempt. The finger is passed as a guide, and the same precautions are taken to avoid interference with the glottis, as in the use of the probang. The cause of obstruction is felt, grappled with, and seized. The extraction of pieces of bone, or other sharp and irregular bodies, as glass or broken china, must be cautiously gone about : the dread of still further injuring important parts being before the eyes of the surgeon. Flat and smooth substances, coins, &c., may be disentangled readily by a flat, blunt hook, fixed on a piece of whalebone, or by a piece of thick, flexible wire, twisted and bent to a convenient form. A foreign substance has been so fixed in the gullet that it has been considered impossible or unsafe to dislodge it upwards or downwards. Nourishment could not be received into the stomach, and the respiration, it has been thought, might thus be interfered with by pressure on the posterior membranous surface of the air-tube. But the obstacle is almost uniformly lodged behind the cartilages of the larynx, which are pretty incompressible. In these cases an incision has been made into the œsophagus from the side of the neck, on its left side, the foreign body has been felt, and care being taken to steer clear of the vessels and nerves, more especially the inferior thyroid, and the recurrent, the tube has been cut through and extraction accomplished. The necessity for this proceeding can seldom arise.

Here we must pause. There are a thousand excellent hints in this volume, which is an eminently practical manual of operative surgery, and ought to be in the hands of every surgeon. The rapid sale of the first edition shews the estimation in which it is held, and we venture to prophecy an equally rapid sale of this and of future ones. We recommend the book in the most cordial manner to all our surgical readers—and to the old as well as to the young.

☞ The Second Edition of Mr. Liston's "Elements of Surgery" came to hand while this sheet was passing through the press. We shall notice it in our next.

II. A PRACTICAL TREATISE ON THE DISEASES OF THE EYE. By *William Mackenzie*, M. D. Surgeon Oculist in Scotland in ordinary to Her Majesty, Lecturer on the Eye in the University of Glasgow, and one of the Surgeons to the Glasgow Eye Infirmary. To which is prefixed AN ANATOMICAL INTRODUCTION EXPLANATORY OF A HORIZONTAL SECTION OF THE HUMAN EYEBALL. By *Thomas Wharton Jones*, Surgeon. Third edition, octavo, pp. 923. Longman and Co. London.

We find the following advertisement to the present edition of this excellent work :—

The demand for this *Treatise on the Diseases of the Eye* has been much greater than the author had any reason to expect. Since its first appearance, two large editions have been exhausted ; it has also been reprinted at Boston in America, and a German translation of it has been published at Weimar.

In the present edition, new matter, which would have extended to about 140 pages of the second, has been added ; but, by enlarging the page, the work has been kept within its former bounds. The whole has again been carefully revised, and such alterations made as have been suggested by the author's continued experience, or by his perusal of the writings of others. He trusts that it will be found, that on every occasion, he has endeavoured to treat his fellow-labourers in the same field with becoming deference and perfect fairness ; never appropriating to himself the labours and improvements of others, but acknowledging openly what he has borrowed.

His friend, Mr. T. Wharton Jones, has revised his *Horizontal Section of the Eyeball* and *Anatomical Introduction*, comprehending in the latter the most recent discoveries in the anatomy of the eye. Mr. Jones has also furnished drawings for a number of new wood-cuts in the body of the work, for which as well as for various practical hints from him and several other medical friends, the author takes this opportunity of returning thanks.

In its present shape, this must be regarded as the most complete Treatise on the Diseases of the Eye which we possess. Its value is enhanced by the wood-cuts, a mode of illustration which must be daily more employed in elementary works. In a future edition, it might be well to add some coloured lithographic representations of some of the diseases of the eye. Were this done the work would be even more valuable than it is—no trivial commendation. We recommend this edition to our readers in the strongest manner.

III. ELEMENTS OF THE THEORY AND PRACTICE OF MEDICINE. DESIGNED FOR THE USE OF STUDENTS AND JUNIOR PRACTITIONERS. By *George Gregory*, M. D. Fellow of the Royal College of Physicians, in London ; Physician to the Small-pox and Vaccination Hospital ; and Lecturer on the Principles and Practice of Medicine in London. Fifth edition, pp. 750. London, Renshaw, Strand.

Our old friend Dr. Gregory has appeared with *his* New Edition on the scene. We are always happy to meet him, and more particularly on such an occasion. His work has ever been a favourite, from the pleasing character of the style and the perspicuity of the matter. And we venture to say it will now be more a favourite than ever. In his preface, Dr. Gregory informs us :—

The demand for a fifth edition has afforded the author an opportunity of making some alterations in the work, which he hopes will give it additional value. The several diseases of the human body have been thrown into a new arrangement. The distinction between acute and chronic diseases has been

abandoned, and a classification has been adopted better suited to the existing state of medical science. The *formulæ medicamentorum* scattered throughout the work have received some additions, and have everywhere been adapted to the nomenclature of the new London Pharmacopœia. Five new chapters have been added—namely, on Cachexia, Hypochondriasis, Cynanche Cellularis, Otitis, and Furuncular Inflammation. The results of the author's more recent experience have been incorporated into the text, and such other information introduced as appeared calculated for elementary instruction. The industry and talents of cotemporary writers, however, it must be observed, are chiefly displayed in matters of minute detail, which, though full of value to the practising physician, are scarcely fitted for a work the scope of which does not extend beyond the fundamental principles of practical medicine.

Dr. Gregory makes some other observations in his Preface, which may claim a passing notice. He remarks for instance that—

Fifty years have elapsed since the death of Dr. Cullen, during which long period a general spirit of improvement has pervaded every branch of medicine, and many important changes have taken place in the opinions entertained regarding the origin of diseases, the modes of detecting them, their seats, and effects. These constitute what may be called the great body of pathology, and it is here that we shall find those improvements which modern medicine may boast. Nor must it be supposed that improvements in pathology are necessarily followed by corresponding changes in the methods of treating disease. These, it has long been observed, have continued nearly the same through every variety of pathological doctrine. It is enough to say that the powers of medicines do not necessarily keep pace with the powers of the human mind in investigating the causes and tracing the relations of diseases.

Of the truth of this remark, at all events in one sense, there can be, we apprehend, no doubt. Our specifics have not increased in number, nor has our confidence augmented in degree. Yet our treatment of diseases has been much improved notwithstanding. In the first place, all that relates to the prevention of disease is much better understood. In the second, the operation of medicines is much more accurately comprehended; witness the use of mercury in inflammatory diseases, as well as in venereal, the exhibition of opium, &c. In the third place we have new medicines of great value, or new preparations of the old. Both in medicine and in surgery, it would be unjust to say that the treatment of disease has not materially improved, though we quite agree with Dr. Gregory that it is in the discrimination of disease that most progress has been made. Speaking of the *Sources of Disease*, Dr. Gregory observes:—

"Great additions have been made since Dr. Cullen's time to our stock of knowledge regarding the sources of disease, both those which are exterior to the frame and those which have their seat within the human body itself. The doctrine of morbid poison, miasma, and contagion, has been much extended; but perhaps there is no branch of pathology which is still in so defective a state. The remarkable differences of opinion entertained on all questions of contagious influence are but little creditable to an age which may boast of such precision in other departments of the science. Two diseases unknown to Dr. Cullen have sprung into notice since his time; namely, Cow-pox and Malignant Cholera. With regard to those sources of disease which exist within the frame itself, we may specify the following as being little, if at all, known to the writers of Cullen's age:—spinal irritation; disease of the brain leading to purulent deposits; spontaneous inflammation of veins and arteries, and the several varieties of disorganized heart."

It were indeed to be desired that medical philosophers would agree on some first principles in determining the laws of contagious diseases. Unfortunately, there are difficulties attendant on our means of investigating the subject, independently of the difficulties that are inherent in itself.

We are glad to perceive that Dr. Gregory does justice to auscultation and percussion in diseases of the chest. His testimony in their favour is the more to be prized, because he was disposed at first to question their utility.

"Much has been done, especially during the last twenty years, towards the more accurate detection of disease. Some progress has been made in the minute diagnosis of diseases of the brain, but it is in the disorders of the thoracic viscera where this great improvement is most manifest. The several diseases of the heart and lungs are now distinguished with an accuracy which would have surprised the most experienced physicians of former times, though one of them (Baglivi), possessed of more than ordinary sagacity, foresaw its possibility. For the original discovery of the healthy murmur of respiration, and of the several modifications which it undergoes during disease of the chest, we are indebted to the acuteness and patient observation of Laennec. To the same enlightened pathologist we owe much of our knowledge regarding the sounds which issue from the heart during disease. This branch of the great subject of medical acoustics is still pursued with diligence, and gives the promise of ultimately attaining to great perfection."

We were always of opinion, and still are so, that auscultation of the heart will ultimately furnish more satisfactory data than auscultation of the lungs. The observations we shall now quote (and we conclude by doing so) on pathology and on morbid anatomy exactly represent the sentiments we have more than once expressed.

"This improvement in modern pathology may be considered as commencing with Dr. Baillie, who succeeded in directing the attention of physicians to the study of morbid anatomy more effectually than had been done by Morgagni, his laborious but diffuse predecessor in the same department of science. It must be acknowledged, at the same time, that the example thus set has been diligently followed in France; and to the zeal of the French pathologists, and the abundant opportunities afforded by the French Hospitals, we are chiefly indebted for the increased amount and accuracy of our information regarding the changes of structure effected by disease.

To such an extent has this study been lately followed, that the term pathology has been, by some, considered as identical with morbid anatomy, and the attention of students has been fixed upon the dissecting-room, as if the elements of pathology could there only be properly studied. This, however, (as a most able writer and acute pathologist has pointed out,) is a manifest error in science. The alterations in structure produced by disease are only one of the elements of our reasoning on the nature of diseased actions. Many other considerations are equally necessary to their elucidation, such as the external causes of disease, the nature of the leading symptoms, their consequences, local and general, and the effects of remedies. These severally furnish the proper elements of that inductive reasoning by which we determine the laws of the animal economy during the presence of disease.

It is also, as the same author observes, a great practical error to fix the attention of students too exclusively upon the *effects* of disease, because in many instances their characters during life are not perceived until the latest and least remediable stage of the disease. The most important part of the history of a disease is that group or assemblage of symptoms by which its nature and seat may be known before any decided lesion of structure has taken place; for this is the season of successful practice, and the mind of the physician should never be diverted from those primary objects of his pursuit,—the power of remedies, and their application during life, to control diseased actions, or to relieve the urgency of particular symptoms."

We have skimmed over the volume, and it seems to us amply to bear out the promise of its author. It is a work admirably calculated for students, with whom we are sure it will be an especial favourite.

ELEMENTS OF NATURAL PHILOSOPHY; BEING AN EXPERIMENTAL INTRODUCTION TO THE STUDY OF THE PHYSICAL SCIENCES. By *Golding Bird*, M.D. F.L.S. F.G.S., &c. London, John Churchill, 1839.

DR. BIRD is a young physician of very high promise. We know of few in the profession more likely to adorn it by either intelligence or industry. Such a work as the present may come naturally from his hands, and deserves to be, and will be well received.

Dr. Bird informs us in his preface that—

"The following manual is chiefly intended as a text-book for the student whilst attending lectures on physics, or as preparatory to his entering upon the study of larger, and more elaborate works. With this view it has been written; and as the great difficulty experienced in executing this task has arisen from the necessity of knowing, not what to insert, but what to omit, whenever a doubt has arisen on this point, in has been determined by a reference to the amount of knowledge required of the student by the different English and Scottish medical boards."

He adds:—

"I have been greatly indebted to several writers in the French and German languages, for many suggestions and illustrations, of which I have never hesitated to avail myself whenever they appeared to divest any subject of obscurity, or to add to its interest. To the 'Précis de Physique' of Biot, the 'Eléments de Physique' of Pouillet, the 'Traté de Physique' of Hauy, the 'Positions de Physique' of Quetelet, and the 'Grundriss der Experimental-Physik' of Kastner, I have been peculiarly indebted for several illustrations, some of which have not, I believe, previously appeared in an English dress.

Having thus explained the object and unpretending character of this volume, I trust enough has been said to blunt the edge of criticism, should such, per chance, be levelled against it. The critic himself, I would beg to remind of the celebrated observation of Horace—

> 'Sunt delicta quibus non ignovisse velimus,
> Nam neque chorda sonum reddit quam vult manus et mens;
> Nec semper feriet quodcunque minabitur arcus.'

Those readers who desire further information on the subjects treated of in this work, and have not the assistance derived from attendance on lectures, may, if only a popular acquaintance with them be required, refer to the very elegant, although as yet unfinished, 'Elements of Physics' of Dr. Arnott, or to Sir David Brewster's edition of 'Euler's Letters to a German Princess.' Those who require a more profound acquaintance with these important subjects, should consult the books referred to in the body of this volume, as well as to the treatises published by the Society for the Diffusion of Useful Knowledge. The series of Essays written by the professors of King's College, London, now in the course of publication will also furnish most valuable comments on this, and other elementary works."

The work consists of twenty-five chapters, and a preliminary discourse. We believe that the best way of giving an idea in the smallest space of its character will be to present the titles of the chapters.

The *first* is on the General Properties of Atoms and Masses of Matter.—2d, Attractive Forces exerted between Masses.—3rd, Bodies in Motion, or General Dynamics.—4th, Effects of Gravitation.—5th, Theoretical Action of the Simple Machines.—6th, Fluids at Rest, or Hydrostatics.—7th, Gases at rest, Aerostatics, or Pneumostatics.—8th, Fluids in Motion, or Hydro and Pneumo-dynamics.—9th, Sonorous Vibrations of Ponderable Bodies, or Acoustics.—10th, Magnetism.—11th, Primary Phenomena of Ordinary Electricity.—12th, Conse-

quences of Electrical Induction.—13th, Consequences of Electric Induction.—14th, Phenomena of Atmospheric Electricity.—15th, Voltaic Electricity.—16th, Electro-Dynamics.—17th, Electro-dynamic Induction.—18th, Thermo-Electricity.—19th, Organic-electricity.—20th, General Properties and Catoptric Phenomena, of Unpolarized Light.—21st, Dioptric Phenomena of Unpolarized Light.—22nd, Chromatic Phenomena of Unpolarized Light.—23rd, Phenomena of Double Refraction, and Rectilinear Polarization.—24th, Chromatic Phenomena of Polarized Light.—25th, Optical Apparatus, and the Eye considered as an Optical Instrument.

We commend the book to the medical public. They who would wish to acquire or brush up an acquaintance with Natural Philosophy will spend a few shillings excellently well on this little volume.

NATURAL HISTORY, &c.

I. A HISTORY OF BRITISH REPTILES. By *Thomas Bell*, F.R.S. F.L.S. Professor of Zoology in King's College, London. Illustrated by a wood-cut of each species, with some of the varieties, and numerous vignettes. Van Voorst. Part III. completing the work.

This interesting account of British Reptiles is now concluded. It makes one of that series of works, published by the enterprising bookseller to the Zoological Society, Mr. Van Voorst. We have often spoken in deservedly favourable terms of preceding Parts. We can speak equally favourable of this. In conjunction with it we may notice the following Parts of other works of the same complexion. The later Parts have not yet reached us. We shall take care to make mention of them to our readers when they do.

II. A HISTORY OF BRITISH BIRDS. By *William Yarrell*, F.L.S. F.Z.S. Parts XIII. and XIV.

This maintains its character—no slight encomium. The chough and crow, the raven, and the rook, *caw* in the pages before us—and the jackdaw, the jay, and the woodpeckers are there too.

III. A GENERAL OUTLINE OF THE ANIMAL KINGDOM AND MANUAL OF COMPARATIVE ANATOMY. By *Thomas Rymer Jones*, F.Z.S. Professor of Comparative Anatomy in King's College, London. Part VII.

This very useful as well as agreeable work holds on its way. The execution is equally creditable to author and to publisher. The present Part is occupied with insecta, arachnida, and crustacea.

IV. SUPPLEMENT TO THE HISTORY OF BRITISH FISHES. By *William Yarrell.* Illustrated with wood-cuts. In two Parts.

It is indeed gratifying to see this interest in Natural History—we trust that medical men will be foremost in evincing it. From the nature of their studies they are adapted to relish and to advance it. We think this series of publications well calculated to foster such a taste.

SPIRIT OF THE FOREIGN PERIODICALS.

On the Duration of Human Life.

There is a very elaborate paper in a recent number of the Bulletin Belge on this subject by Dr. *Bellefroid*, who seems to have devoted much time and study to statistical researches. The following extracts will be read with interest.

Duration of Generations.

It is commonly believed that a generation lasts upon an average from 30 to 33 years, and thus that there are usually three generations, following each other, in the course of a century. The enquiries of M. *Villot*, the keeper of the Archives of France, confirm the truth of this opinion. From these it appears that the duration of a generation, in the *male* sex, is very nearly 33½ years among the upper classes of the Parisians, who have preserved their family records.

It is to be observed, however, that what M. *Villot* understands and means to denote by the expression *duration of male generations* is the interval lapsing between the birth of the father and that of his eldest son.

It would seem, therefore, that the duration of a generation—taking it in this sense—is very nearly the same as the medium or average duration of life in the country. In most of the countries of Europe, this may be estimated at 30 years, or thereabouts. Dr. *Caspar* of Berlin has with Germanic industry endeavoured to make calculations for the entire population of the world. He reckons the population at 960 millions, and the medium duration of life at 33 years: (this last number is certainly much too high.) From these data he concludes that upwards of 29 millions of human beings die annually, 80,000 daily, nearly 3,300 hourly, and 53 every minute. Well indeed may the learned Doctor exclaim, after announcing these awful ravages of insatiate Death, "What then are wars, and pestilences, and battles, and earthquakes, to the great household of creative nature!"

Influence of Sex on the Duration of Life.

The average life of males is in general shorter than that of females at every period of life. Even in reference to still-born children, there are many more such among male than among female births—omitting from our consideration the excess of the former over the latter.

In Belgium, of 2597 still-born children, 1517 were males, and only 1080 were females—a proportion of nearly 15 to 10, while the proportion of the male births to the females is as 15 to 14. The same result has been found at Hamburg, Paris, and Geneva; and we are told that in Prussia, during the years from 1826 to 1831, there were 59,144 still-born males, and only 43,533 still-born females. Dr. *Caspar* has calculated that, if the chances of life were equal in the two sexes, the number of still-born males should not have exceeded 45,709, instead of 59,144. It is certainly not easy to determine the cause of this very marked difference in the mortality of the two sexes at the period of birth. Dr. *Joseph Clarke*, and more recently Dr. *Lombard* of Geneva, have accounted for it by the

greater size of the male over that of the female children,* and by the consequent greater impediments to an easy delivery.

But, although we admit this explanation, how are we to account for the female sex retaining the advantage at almost every period of life?

In England the probable or insurable life of female children, at the period of birth, exceeds by about five years that of males. It is true that they lose this advantage after the first year, and that their chances of life are even less than those of boys at 4, 7, 8, 9, 11, and 14 years of age; but at 15 years—the age which usually indicates puberty—they recover in part the advantage which they had at the period of birth, and they continue to retain it, with only slight exceptions, till about the 75th year, when the chances of the two sexes are about equal.

The following table will indicate the ratio of mortality among the two sexes, at different periods of life, in Belgium.

AGE.	Loss per cent among Males.	Loss per cent. among Females.
From 0 to 1 year	22,0	17,6
1 — 5 years	15,0	14,4
5 — 10 years	4,5	4,1
10 — 20 years	5,9	5,2
20 — 30 years	7,5	8,8
30 — 40 years	7,4	7,2
40 — 50 years	5,7	6,7
50 — 90 years	32,0	36,0

From this table it appears that, during the periods of fecundity and of change of life or catamenial cessation, the mortality is greater in the female than in the male sex; but, with these exceptions, the advantage is decidedly in favour of the *beau sexe;* and they scarcely deserve to be considered, if we bear in mind that the number of women, who reach the age of 20 years, is much greater than that of men.

It would seem, however, according to the results of M. *Quetelet's* enquiries, that there is a marked difference in reference to the advantage of female over male life in the inhabitants of the town and country. In the former, the advantage is decided and very considerable—nearly by *eight* years at the moment of birth,† and scarcely ever less than *three* years up to the 60th year; whereas in the latter it would appear, if the correctness of M. *Q.'s* statements be confirmed, that the chances are in favour of male life from the first to the fortieth year, and that it is only from this last named to the sixtieth year that female life has the advantage.

The following table of the mortality in a hundred among the two sexes will indicate the differences now mentioned, as observed in Belgium.

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* The following table exhibits the average differences in point of weight and size of male and female children, according to the researches of M. *Quetelet.*

	Weight	Size	Difference kilo.	Difference met.
Boys	3 kil. 20	0 m. 496	0,29	0,13
Girls	2 kil. 91	0 m. 483		

† It is supposed that in Geneva the probability of female life is superior to that of males by not less than twelve years, at the period of birth.

Age.	In Towns.		In the Country.	
	Males.	Females.	Males.	Females.
From 0 to 1 month...	11,6	8,8	10,8	8,0
0 to 1 year.....	25,8	20,7	21,3	20,0
1 to 5 years....	16,9	16,4	14,1	14,8
5 to 10 years....	3,5	3,8	4,3	4,4
10 to 20 years....	3,5	4,1	4,9	6,0
20 to 30 years....	7,0	6,7	6,7	6,7
30 to 40 years....	5,9	6,8	4,4	7,0
40 to 50 years....	6,5	6,1	5,5	6,6
50 to 90 years....	30,9	35,4	35,8	34,4

From this table it would seem that the country is favorable to the life of children of both sexes up to the fifth year, but that it is rather injurious from this date to the 20th year in males, and to the 50th year in females; for, whilst women of towns lose scarcely *one per cent.* more than men from the 30th to the 40th year—the chief period of fecundity—and the mortality among them remains even below that of the male sex during the period of the ferment of the passions—from the 20th to the 30th year—the loss during the former period among women of the country exceeds that of males nearly *three per cent.*, and during the latter period it is equal.

Whether this difference arises from the over-laborious life, to which the wives of peasants are subjected in Belgium, or from a greater mortality among them during accouchement in consequence of neglect and improper attendance, has not been ascertained.

Be this as it may, it seems now to be very generally admitted that *child-bearing does scarcely, if at all, add to the mortality in the female sex.*

This position seems to be established by comparing the results of reports from lying-in institutions with those of ordinary statistical tables. Of 118,187 women delivered in the Dublin Hospital from the year 1757 to 1828—and let it be remembered that a great many of these were destitute and sick when admitted—one only died in 83; and at Berlin, from 1819 to 1822, there was only one death in every 152 women who were confined; whereas, on an average in the same city, the mortality among men from 20 to 30 years of age is 1.3 in the same number 152. So much for the commonly supposed increase of mortality from child-bearing.

Let us now see whether there are any real grounds of alarm for what has been called the *critical epoch of female life.* According to the researches of *M. Benoiston* at Paris, Berlin, Petersburg, and in Sweden and Switzerland, it appears that the mortality in a hundred among each sex between the ages of 40 and 60 years of life is as follows.

Age.	Men.	Women.
40	8,2	7,7
45	10,3	8,7
50	12,6	9,6
55	14,7	11,1
60	17,7	13,6

So that, if there is in the human race any thing *critical* between the ages of 40 and 55 years of life, it is rather in the male than in the female sex. We

may therefore conclude with M. *Benoiston*, that "if we examine the mortality among the female sex from the 40th to the 60th degree of north latitude on a line extending from Marseilles to Petersburgh, and passing by Nevers, Paris, and Stockholm, we shall not find, at any epoch of life from the 30th to the 60th year, a sensible augmentation (of the mortality), beyond what may be expected from the natural effect of the advanced age; whereas, at all the epochs of life in males from their 30th to their 90th year, we observe, a considerably greater increase of mortality among men than among women."

It would appear therefore, that there is no real foundation for the common idea that the critical (so called) period of life among the latter affects the rate of mortality in the sex.

It is certainly not very easy to account for the almost uniform greater mortality among the males after the period of puberty. Writers have alluded to the destruction of health from the dangers and excesses, both physical and moral, to which the one sex is exposed more than the other, to the havocs of war, to the losses at sea, &c.; but these influences, although certainly not inoperative, are not sufficient to explain the question at issue. M. *Benoiston* has found that a similar excess of mortality in the one sex exists among monks and other male recluses, compared with that among nuns, as is indicated in the following table:—

AGE.	Mortality per cent. among Monks.	Mortality per cent. among Nuns.
30	8,3	7,9
40	9,5	9,2
50	12,8	11,5
60	18,2	15,0
70	22,6	21,5
80	21,3	22,8
90	7,3	11,1

(The results of this table, it will be noticed, corroborate the previous remarks on the rate of mortality at the *critical* period of life in the two sexes.)

The most puzzling part of the whole problem is to account for the greater mortality in the male sex during the first year of life—and, we may add, before birth, as indicated by the number of still-born children—before any of the physical or moral influences, which have been often considered as affording a solution of the difficulty, are brought into play.

We shall now proceed to another topic of this statistical enquiry.

The Influence of Marriage and of Fecundity on the Duration of Life.

Hufeland and *Deparcieux* were the first who affirmed that celibacy shortens life. Dr. *Odier* concludes, from the results of very numerous enquiries and calculations, that the average or medium of life of a married woman is always superior to that of an unmarried one, except perhaps in extreme old age; at the age of 20, the difference is at least 10 years in favour of the former. The correctness of this conclusion has been amply confirmed by the researches of M. *Caspar* of Berlin, and also of M. *Benoiston*. The former of these authors gives the following table, prepared from the mortality registers of Amsterdam from the year 1814 to 1826.

MORTALITY IN A HUNDRED.

AGE.	Husbands or Widowers.	Unmarried males.	Wives or Widows.	Unmarried females.
From 20 to 30 years	3,5	43,1	4,7	26,5
— 30 to 45 —	17,9	27,1	16,5	24,5
— 45 to 60 —	29,2	15,6	22,6	19,2
— 60 to 70 —	22,0	8,1	22,3	13,0
— 70 to 80 —	19,4	4,3	22,9	11,6
— 80 to 90 —	7,0	1,4	9.6	4,1
— 90 to 100 —	0,8	0,0	1,2	0,7

It should be remarked, in reference to the difference of mortality among the married and unmarried men from the age of 20 to that of 30 years, that the disproportion is not really so great as the table seems at first sight to indicate; for in Holland, as in Belgium, the greater number of marriages among men occur at from 28 to 30 years of age; and those persons who marry earlier are generally in easy circumstances—the favourable influences of which on the duration of life we shall presently shew. On the other hand, the apparent excess of mortality among married men, as life advances, will deceive us, unless we keep in mind that at the age—say of 45 years—a much greater number survive among them than among *celibitaires*. It is however remarkable that of an equal number of 100 individuals of each class there survive 27,2 married men at 70 years of age, whereas there remain only 5,7 celibitaires at the same period of life. M. *Benoiston* is of opinion that the *probable* life of a married man at the age of 20 exceeds by 19 years that of a bachelor at the same period of life.

The beneficial influence of marriage on the duration of life is certainly more striking in the male than in the female sex; but even in the case of the latter, it is only necessary to look over Caspar's table to discover that at almost every period of life, even during the periods of fecundity and of the critical change, the advantage is decidedly in favor of married women.

M. *Benoiston* has calculated what he considers to be the chances in favour of married over unmarried men at different periods of life, and the results may be briefly stated in the following table.

Age.	Difference in favor of married men.
30	17 years.
45	18 years.
60	8 years.
70	4 years.
80	1 year.
90	0 year.

(In conclusion, we can assure the curious reader that he will find the original paper by M. *Bellefroid* very interesting and worthy of study. It is in the last August number of the *Bulletin Medicale Belge*.)

It may be useful as well as interesting, to subjoin to the preceding paper the following table, shewing the proportion of deaths out of 10,000 deaths in males and females, according to the London Registers of Burials 1813—1830, and according to the Registers of Deaths for the year ending June 30, 1838.

[This table appears in the last number of the Review, p. 445.—*Rev.*]

Age.	Registers of Burials.		Registers of Deaths.	
	Males.	Females.	Males.	Females.
Under 1 year.....	2,188	1,756	2,339	1,933
From 1 to 5 years....	1,498	1,450	1,742	1,780
5 to 10 years....	437	410	457	462
10 to 20 years....	579	636	554	647
20 to 30 years....	724	839	738	833
30 to 40 years....	621	725	655	715
40 to 50 years....	649	670	653	632
50 to 60 years....	715	784	656	621
60 to 70 years....	911	922	813	823
70 to 80 years....	1,012	1,086	830	883
80 to 90 years....	584	700	473	556
90 and upwards..	75	116	94	115

ON DRUNKENNESS AMONG THE MANUFACTURING CLASSES IN FRANCE.

A report upon the physical and moral condition of the working classes in France was recently submitted to the attention of the institute by M. *Villermé*, who has long devoted much of his time and attention to all subjects connected with the jurisprudence of medicine. The following extract on the pernicious influence of that most slavish of vices, drunkenness, will show how widely and banefully spread it is among the manufacturing population in that country.

"It would seem that high wages are seldom or ever any great boon to the workman; for the more they gain, the more they will spend; so that at the close of the year, there is rarely any difference in the means or property of the best and of the worst-paid among them.

At the same time it deserves notice that, although they usually consume a large quantity of food when they can procure it, they know how in times of distress to bear the greatest privations. The worst privation to bear, at least to many of them, is the want of wine and other stimulating liquors. It is unfortunately too much the case that, just in proportion to the poverty and distress of the workmen, so is their desire for such intoxicating drinks—no doubt because these make them forget their misery for the time.

Among the working as among the other classes of the lower orders, drunkenness is almost exclusively found among the men; and with them, it has been remarked, that the pernicious practice is seldom acquired before their first illicit connexion with women. It is most common among those who are either exposed much to heat, or have severe muscular exertion during their occupations; and it is more common in the cold climate of the northern than in the warmer climate of the southern provinces. In Lille perhaps more than in any other town the vice is most frequent and most revolting.*

* In the northern countries of Europe the spirit, that is commonly used, is obtained either from barley or from potatoes. The cheapness of the latter kind, and the great number of distilleries which prepare it, have contributed not a little to the increase of drunkenness.

The causes, which most contribute to engender and increase the disposition to drink intoxicating liquors, are.

1. The bad examples which the youth from their very infancy see before them.
2. The choice of apprenticeship to a trade in which many drunkards are employed.
3. The habits of debauch and disorderly life induced by frequenting clubs and other social meetings.
4. The complete idleness on Sundays and on other holidays.
5. The low price of brandy and other spirituous liquors, and the number of cafés and taverns everywhere.
6. The destitution of moral and religious feelings and practices.

The practice of drinking is unquestionably at first acquired by mere imitation, and by a silly desire to be able to do as others do; then a pleasant sensation takes the place of indifference or of even a positive disrelish, until at length an irresistible desire and increasing passion enslave the degraded victim. It is thus that, step by step, and often alas! by a rapid transition, men pass from a decent sobriety to a most dreadful intemperance. When once the habit is acquired, every thing becomes, so to speak, an occasion to visit the *cabaret*. When work is brisk and he receives good wages, he goes because he has plenty of money; when out of employment, he goes because he has nothing else to do; when happy, to enjoy himself; and when unhappy, to forget his distresses. It is at the *cabaret* that he incurs his debts, that he pays them when he can, that he concludes his bargains, and contracts his acquaintanceships; in short, every thing is done at the *cabaret*, until the unhappy man is utterly ruined or is driven to destroy his own life.

When it has reached this pass, not only is all thrift, attention to children, and domestic happiness at an end, but the infatuated man and his family are brought to beggary and want; he is now idle, quarrelsome and discontented, fond of gambling and low play; he becomes degraded in his own estimation, and revengeful against others more fortunate or less vicious than himself; his health is impaired, and his feelings are brutalized; he associates with vice till he forgets that it is so; and at length he gives himself up to the perpetration of some crime which makes him an inmate of a jail.

It may be safely affirmed that drunkenness is the chief cause of almost all the disturbances and insurrections among our working classes, and of the greater number of crimes and offences against the laws.

The greatest blessing that could be conferred upon them would be, not to give them high wages, not to provide them with pleasures and entertainments, but simply to introduce habits of sobriety among them.

But how is this to be effected? Some will answer, by bringing the workman to make it a point of honour to himself to give up the practice, and by inducing him to become a member of a temperance society. The dissemination of books and pamphlets, whose object is to point out numerous mischiefs arising from intoxication, the quarrels it gives rise to, the vices and crimes of which it is the parent, the ruin of health and strength and the debasement of mind which it occasions, should certainly be encouraged not only by the efforts of private charity, but by the direct interposition of all enlightened governments; while others suggest the necessity of restrictive duties upon all distilled spirituous liquors, and of severe police regulations against public-houses being open at late or very early hours. Good may be expected from adopting both of these plans—by appealing to the better feelings of the poor, and at the same time by discouraging and preventing, as far as possible, the sale of ardent spirits for drink by means of high fiscal duties.*

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*Every one residing in London—and we suppose it is, or will soon be, the

M. *Villermé* had consulted several of the old workmen, who had become masters themselves, as to the most advisable means to prevent and discourage the habits of drinking among the manufacturing classes. Their suggestion was, that, for the first offence, the offender should be reprimanded by a magistrate, or even be imprisoned for a few hours, or for a day at most; and that, if the offence were repeated within a given time, the name of the culprit should be published to the neighbourhood. They believed by thus appealing to the honourable feelings of young men, and at the same time by holding out the threat of public exposure, a great restraint might be imposed upon not a few, at least.

To effect the cure of the wide-spread evil of intoxication, religion as well as municipal authority, the clergyman and the magistrate, the gentry and the master-manufacturers should all combine together in a spirit of active co-operation and unanimity. Much might certainly be done, if the *chefs de fabrique* —in other words, the proprietors of manufacturing establishments—were animated by a more philanthropic and christian spirit. Unfortunately every thing is sacrificed to the ambition of mere wealth.

There are however honorable exceptions occasionally to be met with; and they well deserve to be noticed. M. *Villermé* particularly mentions the praiseworthy conduct of the leading manufacturers at Sèdan, who by discouraging the keeping of holidays and of not working on Mondays, by retaining in their employ such workmen as fall sick, and treating them all with kindness but at the same time with firm discipline, and by discharging any, never to receive them back, who are seen drunk, have contributed a great deal to improve the general character of the lower classes in the town.

We do not wish any one to imagine that we are opposed to the workman taking a single glass of wine, or beer, or of cyder: we rather wish that every man could have a moderate allowance of any of these liquors at his meals; the evil is not so much in the act as in the abuse and excess of it. It is however to be remarked that, according to the reports of the American Temperance Societies, no progress will be made in eradicating the evil of drunkenness, but by inducing the members to abstain from spirituous liquors *altogether*, and not merely by limiting the use to a certain quantity, or by taking them in moderation. The extraordinary success which, we are told, has attended the exertions of some of these societies, cannot but delight every well-thinking mind.

It is a common—but, we believe, a mistaken notion—that it is easier for a person to moderate the quantity of an accustomed stimulus, than to forego its use altogether. Reformed drunkards seem to agree that such is not the case; the entire withdrawal is easier to bear than the limited allowance.

The position therefore of the American Temperance Societies is founded on just grounds—*that a complete abstinance from intoxicating liquors is the only certain remedy against intemperance.*

It would seem that hitherto temperance societies have made but little ground in France, and M. *Villermé* appears not to anticipate nearly so much good among his countrymen from them as from well-organized associations of the leading manufacturers for the purpose of encouraging and exacting habits of sobriety from the workmen in their employment. He adds; *I consider the religious spirit of the United States as a powerful element in the success of temperance societies, which does not exist in our population.—Annales d' Hygiene Publique.*

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same in all towns in England—must have been gratified by the change in the appearance of the streets on Sunday mornings, since the New Police Bill came into effect about three or four months ago. No public-house is allowed to be open between twelve o'clock on Saturday night, and one o'clock P. M. on Sunday.—(*Rev,*)

Use of the Microscope in Legal Medicine—Detection of the Spermatic Animalculæ.

The French physicians have, during the last few years, been prosecuting with their accustomed zeal various subjects of physiology by means of microscopical enquiry. There cannot be a doubt that the value of the miscroscope has perhaps never, and certainly not during the last half century, been appreciated by the medical profession as it well deserves to be.

The following extract from an elaborate paper by Dr. *Bayard*, on the *microscopical examination of seminal or spermatic stains on linen and other articles of clothing*, may suffice to shew the assistance to be derived from its adoption. The employment of the microscope, says he, in medico-legal experiments was first practiced and recommended by M. *Orfila*, to ascertain the presence and nature of the fluid within the vagina and on the external parts, whether spermatic or not, in cases of suspected rape. His enquiries did not however, it would seem, lead to any satisfactory results; as he distinctly stated that, "no conclusion can be drawn from miscroscopical examinations in determining the existence of spermatic spots or stains."

It is to M. *Ollivier*, that we are indebted for the first conclusive application of the miscroscope in medico-legal experiments. In June 1837, he was appointed to determine *if there was any hair or portion of hair adhering to a hatchet found in the house of a person accused of murder, and, if so, to say whether these hairs were human or not.* After a very careful examination, M. O. deposed that there were certainly portions of hair, sticking to the blade of the instrument, but that it was not human hair, but that of some of the lower animals.* The correctness of the opinion was confirmed by the result of the judicial enquiry.

M. *Ollivier* has since published, in the Archives de Medecine for December 1838, the account of a novel application of the microscope, to ascertain the purity and genuineness of opium.

In November of the same year M. *Devergie* read before the Academy of Medicine a note on the characters or signs of death from hanging, and he particularly insisted upon the presence of spermatic animalculæ in the male urethra, and of the general congestion of the generative organs, as among the most important of all.†

We must not omit to mention that M. *Donné* had availed himself of the microscope in studying the characters of some animal secretions: his two memoirs "On the Nature of the Mucus and the Matter of Discharges from the Genital Organs in men and Women, and also of the Spermatic Animalculæ" were published during the course of 1837.

In the latter of these papers, he endeavoured to point out the circumstances that were favourable and unfavourable to the life of these animalculæ, and he deduced certain conclusions as to some of the causes of sterility in women.‡

Dr. *Bayard* has, within the last year or two, followed out the suggestions of M. *Orfila* as to the evidence which might be derived from the microscopical examination of spermatic stains in certain medico-legal enquiries, and he has been enabled to correct the erroneous and unfavourable conclusion to which this distinguished physician had arrived.

He shews that it was in consequence of rubbing or beating in the water the linen on which were the spermatic stains, that the animalculæ were so bruised and broken in pieces that they could no longer be distinguished by any micros-

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* Vide Medico-Chirurgical Review, July 1839.
† Vide Medico-Chirurgical Review, October 1839.
‡ Vide Medico-Chirurgical Review, April 1838.

cope however powerful. By simply moistening the linen in water, contained in a watch-glass, for several hours and then heating it gently with a spirit-lamp, he succeeded in detecting the dead animalculæ without any difficulty. Along with these animalculæ may usually be observed some prostatic *monades:* these have a globular form and are without tails, and they are considerably larger than the genuine *zoospermes* or spermatic animalculæ, which, it is well known, have tails, and very much resemble in shape miniature tadpoles. The most important caution in conducting the above experiment is to avoid in any way bruising the animalculæ by rubbing or squeezing the linen. When this has been macerated for a sufficient length of time, Dr. B. sometimes filters the fluid, and thus procures all the solid matter on the surface of the filtering paper. He then takes a small portion of this and drops a little alcoholized or ammoniated water upon it for the purpose of dissolving its mucous portion, and of detaching the zoospermes from its surface: if any fatty matter is present, a few drops of etherialized water should be used. At the bottom of the fluid thus obtained, a deposit will quickly be perceived: of this a few drops may be sucked up by means of a small tube and placed on the object-glass of a microscope which magnifies 400 or 600 times.

When thus examined, we usually perceive between the plates of glass several spots of a greasy aspect; it is in these spots that the animalculæ are generally observed. In other points we may notice numerous corpuscles suspended in the fluid, and perhaps also several of the animalculæ floating freely about.

There is another method that may be followed. A few drops of the fluid may be placed on a portion of glass and allowed to become dry; if it is now subjected to examination with the microscope, the zoospermes will be generally very easily detected.

Dr. *Bayard*, after giving a most minute account of the numerous experiments* which he has performed, sums up the results of his observations in the following categories of conclusions:

1. The spermatic animalculæ retain their life and movements, as long as the mucus, in which they are suspended, remains fluid and warm. I have found them alive during ten hours.

2. The semen, if allowed to become dry and then moistened, swells up and gradually diffuses itself in the fluid—the diffusion being more complete if gentle warmth be applied. By means of a powerful microscope the animalculæ, characterised by their long tails, may then be readily discovered.

3. Dried semen dissolves itself in saliva and also in urine, and the animalculæ are found to be not at all altered in their characters.

4. Pure alcohol, and concentrated solutions of potassa, soda and ammonia do not dissolve the spermatic mucus; they cause it to shrink up, and they destroy at the same time the animalculæ. If these reagents be however sufficiently diluted with water, they exert a very remarkable dissolving action on the mucus without destroying the animalculæ.

5. To detect the spermatic animalculæ in spots upon linen, &c. we must take great care that it be not rubbed or squeezed either before or after maceration. By filtering the fluid of maceration, and then examining the deposit that remains on the filter we can generally detect the spermatic animalculæ uninjured, and with their bodies and tails perfect.

6. The presence of the animalculæ may be discovered in the mucus of the

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* He states that he has been engaged in eleven judicial enquiries connected with the present subject since the beginning of the present year, and that in each of them a microscopical examination, conducted in the manner explained, has furnished *resultats certains.*

vagina, (provided the woman has no morbid discharge) for many hours after sexual intercourse.

7. Dr. *Bayard* says that he has been able to recognize the presence of the animalculæ *a longue queue*, entire and complete in every respect, on spermatic stains of from two to upwards of twelve months old.—*Annales d' Hygiene Publique.*

M. Orfila on the Signs of Death from Hanging.

M. *Orfila* examines the important medico-legal question, how far the state of the genital organs in the male can enable the physiologist to determine whether suspension has taken place during the life or after the death of the deceased. "You know, gentlemen," says M. O., addressing himself to the members of the Academy, "that the presence of zoospermes in the urethra and the congested condition of the genital organs have been regarded by M. *Devergie* as certain signs that the deed, either of suicide or murder, had taken place during life. Now I cannot admit the truth of this idea; for numerous experiments which I have performed demonstrate, in my opinion, its utter fallacy. It is well known that the presence of spermatic animalculæ may be discovered in the urine which has been voided not only immediately, but for several hours, after emission. Now if this be so, we have only to suppose that during the interval death has taken place naturally, and that the body has been suspended afterwards; and then the signs, which M. *Devergie* regards as indicative of his doctrine, will be found present.

But independently of this consideration, I may state that, having most carefully examined the urethra in five persons who had died of different diseases, and were immediately after their decease placed on their backs, I found in all a certain quantity of spermatic fluid in the canal, the animalculæ being even sometimes seen to be still alive. I should add, at the same time, that in several bodies examined more than four and twenty hours after death, the presence of semen could not be detected; the involuntary discharge of the urine at the close of most diseases may partially account for this absence.

As to the question of the alleged congestion of the genital organs after death from hanging, I may mention that I have repeatedly suspended dead bodies, when these organs had previously been observed to be quite flaccid, and that I have constantly found them after a certain lapse of time to become congested, and in one case even obviously erected.

In a phthisical patient, 30 years of age, the penis increased seven lines in its circumference, and a milky fluid, which oozed from the extremity of the urethra, was found on examination to contain dead zoospermes.

In another case the penis enlarged by at least nine lines, and its cutaneous veins became remarkably dilated.

In a third case, the congestion was so great that the penis was stiffly erected and its veins were quite distended; when the corpus cavernosum was divided, a complete stream of blood flowed out.

It appears therefore from these facts that the opinion of M. *Devergie* is contradicted by experience.—*Memoires de l' Academie.*

M. Civiale on the Treatment of Gravel.

The following remarks are from a memoir which this distinguished surgeon read at a recent meeting of the Academy of Sciences.

"Much attention has of late years been paid to the history of gravel; but

most of the enquiries, having been undertaken with systematic prepossessions, have terminated only in false conclusions. For, in truth, the formation of gravel has been almost invariably regarded as being dependent on the mere laws of chemical affinity, and the consequence of this has been that medical men have deemed it quite sufficient in practice to counteract the play of this affinity.

Then again, as soon as it has been discovered that a calculous concretion has been formed, the chief, nay the sole, effort of the practitioner has been to effect either its discharge or its destruction by means of chemical agents, without paying any regard to the organic modifications which gave it birth, or to the influence which it gradually exerts upon the entire system by the mere circumstances of its presence in some part of the urinary apparatus.

What strikes us as especially remarkable in reading the numerous works on calculous disease is, that the authors have generally mistaken, for the essential or primary disease, *one* merely of the effects or results of several morbid states. Hence they have directed their attention only to the removal of the foreign substance already formed, without considering the organic predisposition which has led to its formation; and thus they have allowed their minds to be seduced into a multitude of merely arbitrary conclusions.

Not long ago it was imagined by many writers that calculous disease was scarcely, if at all, known in warm climates, and also that it was of much more frequent occurrence in old men who had been free livers than in others. Now both of these two conclusions have been proved to be quite erroneous by most authentic and trustworthy reports.

It is not surprising that most of the theories, which have been proposed on this subject, should be unable to stand; seeing that they are faulty at their very basis; for the circumstances, which have been viewed as culminant, have in truth little or no real importance in themselves.

The chemical theory of calculous disease can be applicable only at that moment when the urinary secretion has been brought, by a series of morbid actions, to the conditions which determine the formation of gravel. But the question may be asked, what has prepared or paved the way for these conditions? What circumstance or circumstances cause a predominance in one case of uric acid or of urate of ammonia, in another of cystic oxyde, in a third of oxalate of lime, and in a fourth of some phosphate or another?

Now these are questions which it is quite necessary to solve, before we can hope to dissipate that empiricism which hangs round the treatment of gravel. I have attempted the solution; and the manner, in which I have explained the formation of urinary concretions, suggests the elements or principles of that therapeutic practice, which a long and extensive experience has now proved to be so beneficial.

One very fruitful source of the errors of medical men in reference to the success of any particular mode of treatment arises from the circumstance of their losing sight of their patients, and of their mistakingly supposing that they have been permanently cured—whereas, too often, they have left one physician only to go and consult another. Of the truth of this I almost daily see examples.

It is only of recent years that the attention of surgeons has been directed in an especial manner to facilitate the escape of calculi by the urethra. It is a fact of continual observation that, after the operation of lithotrity, fragments of calculi, sometimes of considerable size, will spontaneously be discharged with so little suffering, that the patient is scarcely aware of the occurrence. Now this circumstance, which at first appears to be very strange, is altogether attributable to the diminution of the sensibility of the urethra, in consequence of the preparatory treatment, and to the increase, at the same time, of the contractility of the bladder induced by the manœuvres of the lithotritic operation. The observation of this fact naturally led to the practice of employing the same means to prepare the passages for permitting a transit of calculi which have

descended from the kidneys. The truth of the precept has been established, and the practical results from adopting it have been most highly satisfactory.

Hitherto the morbid conditions of the organs, with which the calculi are in contact, or along which they must pass in order to be discharged outwardly, have been almost entirely overlooked. These morbid conditions are however as common as they are numerous; and each and every one of them may present some obstacle to the spontaneous expulsion of the calculus. The chief of these are the spasmodic narrowings and the organic contractions of the urethra, lesions of the prostate gland or of the neck of the bladder, and atony and paralysis of the bladder itself.

The only effect of these diseases, where they are not complicated with calculus, and provided also they are not developed in their extreme degrees, is to cause the excretion of the urine to be tedious and perhaps painful; but in calculous patients their effects are much more serious, for they directly oppose the escape of the calculi and gravelly matter, or, at least, they render its escape difficult and distressing. I have seen a great number of calculous patients, who had tried without any benefit all the therapeutic means that could be imagined. On examining the state of the urethra in many of these patients, I at once detected a state of spasm or neuralgia, under the influence of which the canal had lost most of its pliancy and power of expansion; and by removing this morbid condition, I quickly succeeded in enabling nature to get rid of the gravel within the bladder, although all medical treatment was suspended at the time.

In the case of other patients placed in less unfavourable circumstances, the expulsion of the gravel continues to take place in spite of the nervous condition of the urethra; but this is accompanied with painful sensations, and in some instances it is only after most severe and protracted suffering that the foreign body or bodies are discharged.

The employment of such means as are calculated to relieve the spasm or neuralgia of the urethra will be found very generally to facilitate the expulsion of the calculi. Such, at least, has been the result of my experience in a multitude of cases, where no benefit had been derived from a rigid vegetable diet, enormous quantities of the alkaline bicarbonates, and a long-continued use of the most approved mineral waters.

Contraction of the urethra is certainly not of rare occurrence. The mere presence of calculi in the bladder has a tendency to induce this morbid state; and thus an obstacle is at once presented to their easy exit. When the contraction is more decided, its existence is denoted by special symptoms—such as the frequent desire to pass urine, the obstructions in doing so, the diminution in the size of the stream, &c. &c. The urethra may, however, be very considerably contracted, without there being almost any difficulty in voiding the urine, and yet no calculi, however small, can pass with ease.

It is therefore an important object in the treatment of calculous complaints to counteract all tendency to contractions of the urethra, by the use of bougies. By effecting this, the bladder may possibly be prevented from becoming thickened and contracted, as we usually find it to be in the cases now under consideration.

The prostate gland too is subject to various organic lesions, the common effect of which is to deform the urethra, change its directions, and at the same time deprive it of that pliancy which is necessary to the exercise of its functions. But it is chiefly on the escape of calculous matters that the diseases of the prostate have the most injurious influence. Hence those matters are usually retained in the bladder, and thus gradually become larger and larger, according to the duration of their sojourn, and the tendency of the urine to precipitate its solidifiable principles.

Now, if the attention of the surgeon be not directed to remove this morbid

condition of the neck of the bladder, or to counteract its influence, no medical treatment against the gravel can be of almost any avail.

Independently of the direct obstruction, in some degree merely *mechanical*, caused by the enlargement of the prostate, or by any other swelling about the neck of the bladder, there is another, which I would denominate *vital*, and which arises from an increase in the sensibility and contractility of the urethra or of the cervix vesicæ.

This affection is usually connected with an incipient organic lesion of the prostate gland and also with the presence of gravel;—so that there are here two obstacles, dependent one upon the other, and of which one may likewise be produced and aggravated by the very gravelly matter, whose escape it prevents. The plan of treatment, which I have recommended against urethral neuralgias, is usually sufficient to regularize the excretion of the urine; and when once this end is gained, the gravelly matter will in general be expelled without the assistance of art. When indeed the organic lesion is serious, the case is often quite intractable; the spasmodic contractions of the neck of the bladder cannot perhaps be overcome by any means, and then the sand and gravel are retained. Under such circumstances, I have repeatedly had recourse to lithotrity for the purpose of effecting the artificial extraction of the foreign matter, and in this manner I have succeeded in curing a great number of patients, who had been for a length of time fruitlessly subjected to the medical treatment in ordinary use.

Such are the cases in which I have employed with very decided advantage injections of water in a full stream, by means of large catheters provided with ample eyes at the points. Although the gravel is removed from the bladder, it is still very necessary to watch the patient; as we must not forget that there remains at its neck a cause of irritation, proceeding from the morbid state of the prostate gland, and the strangury which this induces:—otherwise the gravel will speedily be reproduced.

Besides the causes hitherto mentioned, which tend to prevent the easy expulsion of calculous matter, there is one dependent on the state of contractility of the bladder, which we now proceed briefly to describe.

It is well known that this organ must have, in order to execute with regularity its functions, a certain degree of energy or tone, and this power be equally diffused over the various parts of the apparatus which act together in expelling the urine. Now it often happens that the bladder is deprived of a portion of this faculty, and that, while there is weakness at one part, there is an excess of contractility at another:—there is spasm of the neck, and atony of the body of the viscus.

Hence arises a double cause of obstruction to the free passage of the urine, and of the almost total impossibility of expelling any calculous matter.

If the disease be not very serious, we may often succeed in relieving such a state of things. For the purpose of diminishing the irritability of the vesical cervix, the repeated introduction of bougies will be found to be the most simple and effectual means; and the atony of the body of the bladder is best counteracted by injections of cold water. In a great number of instances I have enabled patients, by the use of these means alone, to expel all the calculous matter in their bladders with great ease and little or no suffering.

The three sorts or causes of impediment to the spontaneous discharge of gravel—the narrowings and contractions of the urethra, lesions of the prostate gland, and atony of the bladder—may co-exist in one patient. Although such a complication necessarily adds much to the difficulty of treating the case, we shall often succeed in obtaining the expulsion of the gravel, and thus saving our patient from calculus, by combining in practice the various modes of treatment, adapted to each, at one and the same time.

It is not only in reference to the expulsion of calculous matter that it is of

high importance to remove the different morbid states now alluded to: they likewise exercise an influence, not less powerful but hitherto not appreciated, on the function of the kidneys, and consequently on the secretion of the urine; one effect of which is to modify and alter its chemical composition so much, that the tendency to precipitation is greatly increased. The therapeutic means therefore, which I have pointed out above, not only serve to diminish the inconveniences and dangers arising from gravel, but they are also the most effectual preservatives—in many cases they alone suffice, without the assistance of any medical treatment—against a return of a disease, which may have existed during many successive years.

After what has been stated, it will be readily understood how necessary it is to explore the urethra and bladder in calculous patients; and yet almost all writers have utterly neglected to point out the utility of such a practice, and have given no other rule to guide the young surgeon than that of merely relieving symptoms as they arise. This is one of the causes, which have most contributed to render of no avail the various methods of treatment, which at different times have been recommended.

Every one can easily understand that, if a calculus be too large to traverse the urethra, all medical treatment which tends to promote its expulsion must be useless, if not positively injurious. Besides, the longer that the gravelly matter is retained in the bladder, the more bulky it will become, until at length one or more large calculi are formed—the removal of which can be effected only by lithotomy or lithotrity. It is therefore of the very highest importance that the disesse be detected in its very earliest stage, and that means be used to discharge any foreign matter from the bladder, while it is in small quantities and of little bulk

Patients themselves have not been without some influence on the stationary condition, in which the history of gravel disorders has for such a length of time languished. The greater number of persons, suffering from these, give themselves up to alarms, of which not a few have become victims. They represent to themselves so frightful a picture of the examinations necessary to ascertain their disease, and of the operations requisite to cure it, that they recoil from the employment of these means, and will submit only to some palliative mode of treatment, during the continuance of which the gravel passes to the state of real calculus.

Among the circumstances, which have most contributed to mislead gravel patients into this error, is the dangerous curiosity of trying to make themselves acquainted with the nature of their disease, by reading all the publications which issue from the press on their disease.

That some medical writers have fostered this pernicious feeling, by addressing their works to the popular reader, is alas! but too true.

On the other hand, the periodical press is found to teem with successive remedies or modes of treatment, which are held out as of infallible efficacy. Every thing is greedily read by the poor patient; and thus not only is he tortured between vain hopes on the one hand, and the terrors of irremediable suffering on the other, but he at the same time is losing much of that precious time, during which his disease, if not relieved, is most assuredly gaining ground.

Such is one of the many evils which spring from the press—too often lauded as the parent of unmitigated good, but which alas! like all other human inventions, is faulty, imperfect, and most pregnant with evil. *La Lancette Française.*

EPILEPSY AFTER AN EXTERNAL INJURY CURED BY TREPHINING.

In a recent number of the Italian Journal, *Il Filiatre Sebezio*, we read the following case reported by Dr. *Renzi*.

"A youth, 18 years of age, had been subject since he was ten years old to attacks of epilepsy; they had resisted every mode of treatment, and within the last half-year had become so frequent as to return almost every week. By falling from a scaffold he sustained a fracture of the frontal bone, and also of the left thigh. For five months he was confined to bed. The wound of the forehead suppurated and the injured bone exfoliated. During the whole period of treatment, there was no return of any epileptic paroxysm; and moreover, the patient had quite lost that stupid air so frequent in epileptic patients, and his intellectual powers seemed to have become altogether invigorated. But scarcely was the wound of the head healed than the epileptic fits returned with fresh violence. A seton however being immediately put in the neck, the disease was checked and finally arrested."

The reading of this case reminded M. *Busse* of a case, which had come under his notice many years ago. A youth received some severe blows on the head from his master, whom he had displeased. After the immediate effects of the injury had passed away, the boy became affected with paroxysms, first of chorea and subsequently of decided epilepsy. The frequency of these paroxysms increased so much, that at length the patient had several of them every day. On examining the head, it was found that there was one spot on the vertex which was excessively tender when pressed upon.

An incision was made through the scalp down to the bone; but no unusual or abnormal appearance was perceived. Notwithstanding this, *Hufeland* recommended that the bone should be trephined. During the very process of perforation, the patient was seized with a fit. An effusion—it is not stated *where*—and a fissure of the internal osseous lamella were discovered. The patient not only recovered perfectly from the effects of the operation, but never had any return of the epileptic disease.

His health continued quite good for many years; he married and became the father of a healthy offspring. During a period of upwards of twenty years he had only three attacks of an epileptic paroxysm; each of these attacks had been preceded by indisposition, and had been brought on by mental emotions.—*Hufeland's Journal der Practischen Heilkunde.*

ON DIURESIS AS A REVULSIVE ACTION IN DISEASES OF INFANTS.

Dr. *Simon* prefaces his remarks by alluding to the frequent inactivity, and sometimes the almost complete suspension, of the functions of the bowels and kidneys, while the system of the child is suffering severely from dentition. Whenever the intestinal or urinary excretion is much diminished, the febrile irritation of the system, it is well known, is invariably greater than usual; and, if this state of things be permitted to continue without relief, there is much risk of alarming cerebral symptoms quickly making their appearance. The practitioner will therefore do well to pay particular and uniform attention to the condition of the bowels and kidneys in all diseases of infancy and childhood. The simple question as to the quantity and colour of the urine—and by the bye we can much better trust the report of nurses about the state of the urine than we can about that of the alvine evacuations—will often enable us at once to form a correct opinion as to the general or constitutional health of our patient. As long as the kidneys act freely, there is little or no risk in the symptoms of mere denti-

tion, however severe and distressing these may be. The same remark is, we believe, strictly applicable to the prognosis of most cerebral affections in children. When the urinary secretion is scanty and deep-coloured, the circulation seems to be both oppressed and excited; and the rapid, on some occasions almost instantaneous, mitigation of the alarming symptoms after a copious discharge of water is well known to all experienced practitioners. To promote this critical diuresis, a purgative composed of senna and salts, and then frequently repeated doses of nitre,* are the simplest and most efficient means that can be resorted to.

The chief danger of dentition is referrible to the vascular excitement of the brain. Nor is this wonderful; when we consider that for several successive months there is a continued, and often very severe, irritation in its immediate neighborhood. The pain attendant upon the cutting of merely one tooth, in our adult years, may teach us to form some idea of the suffering of an infant during the period of its first dentition.

Now it is a common observation that almost all head-aches are most promptly relieved by whatever stimulates the kidneys to throw off a quantity of urine. When this takes place, the system feels at once relieved of a load or oppression which seemed to clog all its energies, and the mind as well as the body becomes more light and vivacious. We are thus led by the experience of our own feelings to anticipate the benefits, which must attend the stimulation of the kidneys in the various affections of children arising from teething.

On the whole, we do not think that there is a more important sign to be attended to in the management of children, during the first two years of their life, than that afforded by the state of the urinary secretion. If nurses and mothers were better aware of this simple, but most valuable, suggestion, the life of many an infant might be saved; for disease would often be detected in its earliest stage, and then might certainly be arrested by the administration of appropriate means. With regard to medical men, we strongly counsel them to make it an invariable rule in their practice to enquire into the state of the urine. As we have already hinted, we can more generally depend upon the reports of mothers and nurses as to the appearances and condition of the urine than of the alvine evacuations, in those cases where we cannot examine the excretions for ourselves.

Nothing will more contribute to relieve the system of the feverish irritation, under which the system of a child suffers during dentition, than a copious diuresis. We should bear in mind too, that independently of the excitement arising from this cause, there is naturally and necessarily a tendency to over-action of the blood-vessels in the head during the first year or two of life. The brain, it is well known, is larger then in proportion to other parts of the body than in after years; all the senses are, probably, more acute, the mind as well as the body is rapidly growing, and perhaps scarcely a day passes over without there being made some addition or another to the store of infantine perceptions and ideas. We cannot wonder then that the simultaneous development of so many

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* Some practitioners are in the habit of adding minute doses of digitalis to the diuretic mixture; and seemingly with good effects. The following formula will be found to answer well.

℞. Potassæ nitratis..... ℈j.
Aquæ m. viridis..... ʒijss.
Syrupi croci..... ʒij.
Vini antimonialis..... ʒiss.
Tinct. digitalis..... ♏xvj. M.

A table spoonful to be given every two or three hours.

organs and new faculties should have a powerful influence on the physiological and pathological phenomena which characterize this period of life. To refer all to the excitement arising from the evolution of the teeth, is to take a very partial, and therefore an erroneous, view of this important question. A valuable therapeutic principle is suggested by these considerations; and it is this: that in the treatment of many diseases of infancy we have rather to *regularise* than directly to check or overcome; and therefore that we should most attentively examine the condition of all the functions of the body, in order that we may discover the direction or sense, so to speak, in which nature's efforts are working, and be enabled to assist her in these efforts.

Before closing these remarks, we may very briefly allude to the notable effects which diuretic medicines sometimes exert on the progress of hooping-cough. The administration of nitred drinks and of minute doses of digitalis* seems often to promote the crisis of the disorder in its earlier stages; and, in its more advanced and chronic form, the use of tincture of cantharides has been recommended by Dr. Watts and others, as one of the most efficient antidotes.† The excitement of the urinary viscera produces a powerful revulsion on the neurosthenic condition of the gastro-pulmonary apparatus, and thus seems to act as a derivative of the morbid action.

In fine, the kidneys become, in numerous cases of disease, the seat of an active eliminatory process, of which the skilful physician will avail himself in the treatment of dentition and of various other affections to which children are especially liable during the first two years of life.—*Bulletin General de Therapeutique.*

ON THE INTERNAL USE OF ACETATE OF LEAD IN ANEURISM OF THE AORTA, &c.

Aneurism of the aorta is very properly considered as an incurable disease; for in all the cases where a cure has taken place, this has been the result of the efforts of nature, and certainly not the direct effect of the remedies employed. We do not mean by this assertion to disparage or condemn the use of all therapeutic means in the treatment of this formidable affection; far from it; judicious medical regimen, as regards not only the administration of drugs and the regulation of the diet, but also the general management or discipline of the entire system, mental as well as corporeal, may powerfully contribute to accomplish the desired end, by encouraging the formation of coagula within the sac, and removing all the impediments to this curative process. The mode of treatment so strongly recommended by *Valsalva*, that usually it passes by his name, and which consists, it is well known, in frequently repeated abstractions of blood and in continued rest and quietude, appears to us to be of very questionable propriety. For the effect of it must surely be to attenuate the condition of the blood itself, and therefore at once to diminish its coagulability or tendency to deposit its

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* Dr. Simon recommends the external use of tincture of digitalis rubbed, as a liniment, on the abdomen.

† A favourite formula of some physicians in certain chronic cases of hooping-cough is the following:—

℞.	Tinct. cinchonæ	ʒiij.
	Tinct. lyttæ	ʒj.
	Tinct. camphoræ comp.	ʒij.
	Mist. camphor	ʒijss. M.

Capiat coch. j. magnum ter in dies.

fibrinous constituent—the very property by the operation of which the curative process is to be effected. M. *Dupuytren* had for many years abandoned the practice of frequent bleedings in the treatment of diseases of the heart and large blood-vessels. Blood was drawn only for the purpose of relieving present distress and existing congestion. It seems therefore to be more rational to make use of any means—if such really do exist—which have the effect of retarding the force of the circulation, without at the same time altering the qualities of the blood. The late Baron *Dupuytren* and some other medical men were in the habit of occasionally using the acetate of lead, as an internal remedy, with this view. MM. *Dusol* and *Legroux* have collected together the data of several cases where this saturine preparation seemed to produce good effects in cases of aneurism of the aorta.

It is to be regretted that the reports are not sufficiently minute to satisfy the medical reader in every respect; but it cannot be denied that they are sufficient to justify the conclusion that the remedy deserves to be more frequently used than hitherto it has been.

The following is the statement of one of the cases:

A man 37 years of age, was admitted in May, 1829, into the Hôtel Dieu, and under the care of M. *Dupuytren*, with a pulsatile tumor extending from the right side of the sternum in the direction upwards. Three years before the date now mentioned, he had suddenly experienced, while lifting a heavy weight of timber, a sharp pain on the right side of the chest, accompanied with difficulty of breathing. He continued however regularly at his work for the next fifteen months; but the oppression gradually increasing, and being now attended with severe headaches and acute pains in the right shoulder and extending upwards along the neck in the direction of the great blood-vessels, he had been bled once or twice from the arm; but this treatment had afforded partial and temporary relief.

At the end of several months, a tumor was perceptible outwardly: and this gradually attained the size of a large egg. As this outward swelling made its appearance, the dyspnœa became less troublesome, until at length it almost entirely ceased for a time. The distress of the patient however, soon returning, he applied for admission into the hospital. The tumor was found to pulsate isochronously with the beats of the heart; the skin was somewhat reddened and seemed to have become attenuated; there was frequent cough and dyspnœa—which was sometimes so distressing as to prevent the patient from laying down—congestion of the features, occasional difficulty in deglutition, and tendency to most annoying dreams during sleep. After a small bleeding, the patient was ordered by *Dupuytren* to take a pill, containing one grain of acetate of lead, twice in the course of the day; the number was gradually raised to six in twenty-four hours. Within three weeks, the size of the swelling was very sensibly diminished; the same treatment was therefore ordered to be continued, and the part was to be kept covered with compresses, wetted with a saturnine wash. The dose of the pills was raised to eight and then ten, each containing one grain of the acetate, a day during the month of June; and as the patient at this time began to suffer vomiting, the medicine was omitted for about a week. It was, however, then resumed and persevered in for another fortnight. The patient at this time left the hospital in all respects wonderfully relieved: he was advised to continue the same treatment for some weeks longer.

The second and third cases reported in the memoir of MM. *Dusol* and *Legroux* are so very similar to the one now briefly narrated, that it is unnecessary to particularise their details. In all the three cases, not only did the outward swelling very notably subside, but also the respiration experienced such decided relief, and this too long before there could have been any decided diminution in the pressure of the tumor on the lungs or trachea, that we deem it probable that the remedy acted directly upon the organs of circulation.

The influence of acetate of lead in hæmoptysis, and in some other forms of internal hæmorrhage, is very generally admitted. How does it act in such cases?—it seems probable that it is by a directly sedative operation on the heart, and thus removing, or at least mitigating, the *engouement* and conjestion of the pulmonary tissue. The acetate of lead has been used with advantage to check the amount of purulent expectoration in phthisis, to arrest all excessive evacuations from the bowels, to moderate the superabundant flow of milk, &c.: it seems in short to be a very general astringent.

The study of the rationale of remedies—or in other words the *science* of therapeutics—is a subject of first-rate importance to the physician. Indeed it affords by far the best means of improving the practical part of our profession; and this, after all, is the end and scope of our labors.—*Archives Generales.*

On Hydrocele of the Neck.

Those encysted tumors of the neck which have been sometimes designated hydrocele of the neck, although mentioned in the writings of some of the older authors, had attracted little notice, until M. *Maunoir* of Geneva published, in 1825, his work entitled "Memoires sur les Amputations, l'Hydrocele du Cou, et l'Organisation de l'Iris." M. *Delpech* subsequently narrated, in his Clinique Chirurgicale, two cases which he had successfully treated by operating. Messrs. *Lawrence*, *O'Bierne*, *Heidenreich*, *Beck*, &c. have since published the reports of a few additional instances of this rather rare disease, and have thus contributed to enlarge our knowledge of its true characters.

According to the researches of MM. *Fleury* and *Marchessaux*, in the August Number of the Archives Generales de Medecine, there are two sorts of these tumors, which may be distinguished from each other by the difference in their anatomical characters.

The *first* are those which are developed in the actual tissue or substance of the thyroid gland. They are sometimes superficial, at other times deep-seated: they correspond to the cellular or thyroidean serous goitre of *Beck* and *Heidenreich*, to the hydrocele of the neck, of *Maunoir*, the hydro-bronchocele of *Percy*, and the encysted goitre of other writers.

The *second* are developed in the common cellular tissue of the neck, at a greater, or less distance from the thyroid gland, and, according to some authors, in the cellular texture of this gland itself. These have been denominated by *O'Beirne* hydrocele of the neck, cystic tumors by *Boyer* and *Dupuytren*, fibro-serous cysts by *Delpech*, and hygroma cellularis by several German surgeons.

MM. *Fleury* and *Marchessaux* have given a very minute description of the anatomical peculiarities of these two sorts of tumors. Those, which more properly appertain to the thyroid gland, had already been ably treated of by MM. *Andral* and *Beck*.

The other kind, or such as are developed in the cellular tissue, are genuine encysted swellings; the cysts of which are formed by the progressive development of a fibrous tissue, which, as Bichat first demonstrated, exhibits many of the characters of serous membranes. The skin over them does not usually undergo any change, except perhaps when it adheres very firmly to the subjacent cyst; and then it becomes so very thin, from the absorption of all the fatty matter, that the minute bloodvessels can often be seen through it. At other times, the cyst is connected with the surrounding parts only by very loose cellular-tissue, so that it remains very moveable. The parietes of the cyst are usually firm, little or not at all elastic, and thickened. The thickness is sometimes remarkable: in one case the anterior wall of a cyst was found to be nearly an inch

in thickness. Not unfrequently within their cavity are found laminæ of a cartilaginous and even of an osseous formation.

These characters are always the more decided in proportion to the length of time that the swelling has existed. The internal surface of the cyst, when its aspect is not completely modified by the transformation which it has undergone, exhibits a white, reticulated, appearance, not unlike the inner surface of the ventricles of the heart, or of the urinary bladder in certain cases. This surface is coated throughout with a pseudo-serous membrane, which invests all the ridges and furrows, and which some anatomists have described under the name of internal lamina of the cyst. Its thickness, colour, and consistence vary much in different cases: in some it is smooth and of white colour, while in other cases it is more or less red, and resembles a softened mucous membrane. Occasionally pieces of this lamina become detached, and, floating about in the fluid of the sac, have been mistaken for hydatids.

The encysted tumors of the neck have been met with in both sexes, and at almost every period of life: sometimes they are congenital. Their growth is usually very slow; and in most cases no cause can be assigned for their appearance. Occasionally they have been observed to enlarge rapidly after a catarrh, and also after an accouchement.

If allowed to attain a large size, they impede the respiration, and even the deglutition, as well as the circulation in the neck and head.

The fluctuation of their contents is generally more easily perceptible in the earlier stage of the disease—provided the tumor be sufficiently prominent—than when it is more advanced, in consequence of the parietes of the cyst gradually becoming thicker and more resisting. Hence mistakes in diagnosis have occasionally been made by the most experienced surgeons, and cases of hydrobronchocele have been considered as examples of goitre, or of some other solid growth. We may also mention that the tumor may sometimes be mistaken for an aneurism of the carotid artery, in consequence of its communicating the pulsations of this vessel; but a careful examination of the case will generally enable the surgeon to discover that the swelling experiences a lifting up or rising *en masse*, and not those movements of alternate expansion and retrocession, which are characteristic of a genuine aneurism.

With respect to the different methods of treating hydrocele of the neck, authors very generally agree in regarding *puncture* as a mere palliative means, and as one moreover not always free from inconveniences; and they condemn *injection* of the sac, as uncertain in some cases and highly dangerous in others. The use of a *seton* or something analogous, as a canula, tent, &c., appears to be the practice most extensively approved of.

In one of the cases, which occurred to *Dupuytren*, the sac refilled to its former size within a short time, although a seton had been in it all along; a canula of elastic gum was therefore introduced and left in the lower opening, so as to permit a ready escape to the contents of the sac, and at the same time to allow the occasional injection of emollient and detersive washes.

MM. *Fleury* and *Marchessaux* also record a case, in which the same method was adopted with success, after various other means had been ineffectually tried.

In a case, which occurred in a girl 17 years of age, M. *Jobert* punctured the tumor three times successively, the fluid having re-accumulated quickly after each operation. After the third puncturing, some alcoholised water was injected into the sac, and then a seton was introduced for the purpose of keeping the wound open. At the end of a week, suppuration was but imperfectly established, and there was only a slight serous oozing, when the seton was removed. An elastic-gum canula was therefore substituted for the seton; this was kept in the opening, and gently stimulating injections were repeatedly passed through it. After the lapse of two months, the swelling, which had been of an immense size, was not

bigger than an egg; and four months later, all that remained was a small kernel or lump, which was entirely indolent.

M. *Flaubert*, of Rouen, has published a case which he succesfully treated by *incision*—a method which has succeeded in the hands also of MM. *Delpech*, *Morelot*, *Lemaire*, and which an Italian surgeon has in one case combined with the use of the seton.—(*Annali Universali.* Feb. 1838)

Excision has been repeatedly adopted with complete success. In three cases *Beck*, after having laid open the tumor by an incision, excised a portion of the cyst, which was not connected with the thyroid gland. This method hastens the process of suppuration, and does not seem to be attended with any inconveniences, when precaution is taken to avoid wounding the substance of the thyroid gland.

The *extirpation* of the entire sac may be adopted with advantage, when the cyst is small, superficially seated, and not firmly adherent to the thyroid gland, or to any other of the neighbouring important parts.

M. *Jobert* practised it with success in the case of a woman, 30 years of age, in whom the tumor was of the size of a hen's egg, and was smooth, hard, and so resisting, that it communicated no feeling of fluctuation; the wound healed up by the first intention, the twisted suture having been employed to retain its lips together. But we must refer our readers, who may wish to make themselves acquainted with the particulars of the various cases on record, to the original paper of MM. *Fleury* and *Marchessaux*, and will now extract only the following conclusions, which they have deduced from their enquiries.

1. The encysted tumors of the neck may be arranged, according to their anatomical position and relations, in two classes—one comprising such as are developed in the substance of the thyroid gland, and the other, all those which are developed in the cellular tissue of some portion of the neck.

2. The *first* set seems to be attributable to the hypertrophy of one or more of the cells of the thyroid gland, and if so, cannot be regarded as encysted tumors, in the strict sense of the phrase; whereas in the *second* set, the sac of the tumor is a genuine cyst of a sero-mucous nature.—(*Delpech.*)

3. This distinction is important both in a diagnostic and in a therapeutic point of view.

4. The tumors of the first class may be readily mistaken for genuine goitre; and those of the second for chronic abscesses, lymphatic swellings, or aneurismal swellings.

5. Encysted tumors of the neck, whatever be their nature, should never be left to Nature; they always require surgical assistance for their dispersion.

Among the various methods of treatment, which have at different times been proposed, that of nearly puncturing, and that of injecting the sac, appear to be the least trustworthy and advisable. The employment of a seton, after a free incision has been made, has been found useful in tumors of the first class, by inducing and keeping up a long and abundant suppuration, and thereby causing a melting down of the hypertrophied and swollen tissues; also in all cases where the cyst was multilocular, by giving a free discharge to the contents, and preventing an accumulation in any of the cells. On the whole, it may be laid down as a therapeutic principle, that the incision of the swelling and the subsequent employment of some means to establish suppuration in the cyst, seem to be the best method of treating almost every encysted tumor of the neck, whatever be its origin or seat.

The complete extirpation of the sac may be recommended when this is not very large nor closely adherent to the surrounding parts.—*Archives Generales de Médécine.*

Hints on the treatment of Wounds after Operations.

The following brief passages are extracted from a letter which M. *Phillips* of Liege has recently addressed to M. *Baudens*, the distinguished chief surgeon of the French army in Africa.

. . . . After an amputation in a joint, the flaps should be brought and kept together by a few stitches, in order to promote union by the first intention; but as adhesion rarely, or perhaps never, takes place between the surface of a cartilage and the contiguous flesh, we should not only remove as much of it (the cartilage) before closing the wound, but also place a small portion of lint upon it, so as to encourage suppuration at this point, while the rest is retained in exact contact. The annals of surgery afford scarcely one instance of complete and perfect union, without suppuration, of a wound after a disarticulating amputation.

The disarticulation of the femur performed by the late M. *Delpech*, where the wound healed almost immediately, is perhaps the most fortunate case on record. The patient had suffered from disease of the femur for nearly 19 years, and he was falling into a state of marasmus. The crural artery being first tied, the chief flap was formed from the muscles on the inside of the limb; the head of the bone was then easily disarticulated, and the operation quickly finished. The two flaps were kept together by numerous stitches, which traversed the integuments only.

On the sixth day, there was a serous oozing from the wound, and on the ninth, a very slight suppuration. On the 28th, the cicatrization was complete; but about the end of the second month, a white substance presented itself; this was the cartilage of the joint. It was immediately removed, and the wound speedily healed.

Such an occurrence—as that of the cartilage making its way to the surface with no local or general disturbance—is excessively rare, and should not influence our practice much. We are therefore of opinion, on the whole, that whenever an amputation is performed at a joint, an issue or opening should always be left opposite to the cartilage, while the rest of the wound is retained together by sutures.

Even after ordinary amputation, where a bone has been sawn across, some surgeons have recommended that the same practice be pursued; but, without positively admitting the propriety of so general a rule, it is worthy of remark that, when the two ends of a bone are sawn off in cases of ununited fractures, not only is there a better chance of a union taking place, but this union is always much firmer and more solid, when suppuration has been established at the point of junction, than when immediate adhesion of the wound has occurred. Such was the opinion of M. *Delpech*; a high authority certainly on all subjects of practical surgery.

. . . . . Numerous statistical reports of the mortality after amputations of the larger limbs have been published of late years; but, from the imperfection of their details, such as the mode of dressing after the operation, the use or not of sutures, &c. &c., it would be unsafe to draw any positive inferences. The success of M. *Percy*, after the battle of Neubourg, deserves however to be alluded to, in consequence of certain circumstances. There was such a want of many of the most necessary articles, as lint, ointment, and bandages, in the French camp, that all the patients were dressed indiscriminately with merely cold water. It is probably to this very circumstance that the great success of the surgeons, in the results of their operations, was attributable on that occasion. For some years past, the same practice has been adopted by Mr. *Liston* at the London University Hospital, and M. *Phillips* has of late universally followed it with very marked benefit, after almost all his operations.

In all severe injuries of, as well after operations on the eye, M. *P.* always subjects the part to the action of cold water for several days. Also after the extirpation of tumors, when the lips of the wound have been brought and kept together by several stitches, compresses wetted frequently with cold water are laid invariably upon the part. M. *Phillip* mentions that in such cases he generally unties the ligature at the lower angle of the wound on the day after the operation, for the purpose of giving exit to any bloody or other kind of discharge, and after removing this, he again secures it. On the third or fourth day he removes one ligature, and another on each successively; continuing the use of the cold applications all the time. M. *P.* trusts to *torsion* of the arteries to arrest the hæmorrhage, after many such operations. There is very little doubt that this simple expedient, if really sufficient as a hæmostatic means, must contribute very materially to the speedy union of wounds, as each ligature on a blood-vessel must necessarily give rise to a point of suppuration and to a minute sinus or fistula extending from the tied vessel to the surface of the wound.—*Bulletin Med. Belge.*

ON THE ADVANTAGES OF DELAY (EXPECTATION) IN THE TREATMENT OF COMMINUTED FRACTURES.

The great aim of the surgeon consists, or ought to consist, in preventing the necessity of any cutting operation, and in curing his patient without having recourse to the knife. Every operation, it has been well remarked, may be considered as an opprobium of the surgical art, and as an admission on the part of the surgeon of the inefficacy of his own skill. Influenced by the truth of this sentiment, we propose to endeavour to point out the advantages of *expectation* in the management of certain severe injuries of the joints and limbs. By this term we wish to express a prudent and well-considered delay for several days after the receipt of a severe accident, and during which time a skilful management of all the symptoms, constitutional as well as local, is perseveringly pursued—so that on the one hand a fair chance is given to Nature to repair the damage, and on the other hand, that the health of the patient is not unwisely risked too far before any mutilating operation is resorted to.

It is perhaps the more necessary to call the attention of surgeons to this most important subject in the present day, as there seems to have been, for many years past, a tendency to rather precipitate conduct in the treatment of severe and complicated injuries of the limbs, by having recourse to immediate amputation of the extremity. Encouraged by the precepts and example of our military surgeons—who, it is to be remembered, are often under the painful necessity of amputating at once in cases where, in more favorable circumstances, the limb might be saved by delay—and misled by reports and statistical details of many writers who have certainly exaggerated their own success, practitioners seem to have forgotten the advantages of a *sage reserve*. Certain it is, that the more experienced a surgeon becomes, the less hasty is he to lop off limbs at once, and the more inclined he is to give the system a fair chance of repairing the injury—without however delaying an operation too long, if such be absolutely necessary.

The judicious employment of local and general bleeding, of refrigerant drinks, of low diet, &c., in robust and plethoric constitutions, and of opiates and other anodynes, along with these means, in such as are feeble, lymphatic, and nervous will often serve to prevent, or at least to mitigate, the severe symptoms which follow as a matter of course, every serious injury or wound. At the same time, the free incision (*debridement*) of such parts as may be tense and confined, the extraction of splinters which are always a cause of much pain and irritation, the

resection of any protruded bones, the adjustment of opposite surfaces by means of stitches or bandages, the continued affusion or irrigation of cold water on the seat of the injury, the employment of emollient or resolving remedies according to existing indications, the use of the starched bandage (*bandage amidonné*) as soon as the first or inflammatory accidents have passed away, and the administration of internal or external revulsives when any complication supervenes—these means, if judiciously practised, will in very many cases enable the surgeon to conduct his patient through numerous dangers and difficulties, and restore him to health without having undergone any loss or mutilation. The salutary effects of one or two large blood-lettings, in cases of severe injuries of the limbs, are well known to most practical surgeons; many an unpleasant accident might be avoided by the prompt and decided use of the lancet.

In reference to the application of leeches in such cases, it may be useful to state that they should be applied not to the immediate vicinity of the injury, but at some distance from and above its seat, and if possible near to the point where the smaller veins terminate in the larger trunks.

The irritation caused by leech-bites close to a contused or lacerated wound has often caused serious mischief.

We have already alluded to the advantages of removing any tension in the wounded part by means of one or two free incisions. Some surgeons have of late years questioned the propriety of this practice; but fortunately they have made few converts to their opinion, and the value of the precept is now very generally acknowledged. In many cases we should not wait until the inflammatory tension takes place before we have recourse to this practice, as it is much easier to prevent than to relieve the mischief.

The following are said to be the good effects of a continued irrigation of the injured part with a stream of cold water. "It arrests inflammation, checks the swelling of the tissues, soothes pain, lulls sympathetic irritations, and stifles any sanguineous reaction; the tissues bathed, as it were, in a permanent bath, become pale and colourless; their vessels no longer receive more blood than is necessary for the support of their organic life; suppuration is established slowly and scantily, and the reparative process is not disturbed by any violent excitement either in the part itself or in the system. The water should be of the ordinary temperature; and the limb should be placed in some apparatus which protects the bed from wet, and the parts, which are not exposed to the current, should be enveloped in warm flannel. By attending to these precautions, the risk of any pulmonary or abdominal irritation will be prevented, and the irrigation may be safely continued until all chance of inflammatory excitement has passed away."

In some cases, however, as when there is any tendency to pneumonia or enteritis present, or when the injured parts have been so severely bruised as almost to have lost their vitality—the use of cold affusions is inadmissible. Then we should have recourse to opiate cataplasms, which are especially useful when the process of suppuration is commencing.

With respect to bandages, they cannot be too simple and lightly applied at first. Whenever the risk of inflammatory action is over, and the use of the cold irrigation is therefore unnecessary, there is no remedy so useful in promoting the cicatrization of any wound and the solidification of the callus between the fractured ends of the bones, as the employment of the starched bandage or roller.* It has the great advantage of giving such equable support to the

* This—the *bandage amidonné*, which has for the last few years been so highly recommended by MM. *Seutin*, *Velpeau*, and other continental surgeons, as constituting by far the best immoveable case for fractured limbs—is merely a common roller soaked in starch mucilage before it is applied. When it becomes

injured limb that the patient may move it about in bed, or even walk upon crutches without any danger; and thus much of the sufferings, which are almost inevitable upon long confinement, is prevented. Moreover it is light, easily applied, and when once adherent is not liable to be displaced. It requires renewal only when, from the subsidence of the swelling of the limb, it has become rather loose around it, or when it is much soiled by the discharges. Openings must be cut in the bandage over the seat of any wound, so that this may be regularly dressed. We regard the employment of the continued irrigation of the injured part and of the subsequent application of the *starched bandage* as two of the most valuable acquisitions which the art of surgery has obtained in modern times, and as destined to introduce, in the treatment of comminuted and complicated fractures and such like injuries, a most beneficial revolution.

As to the sympathetic or constitutional phenomena, which usually attend all very severe accidents, no general rules can be given how they are to be obviated or relieved. The surgeon's duty is to question, as it were, every organ, so that no symptoms, however obscure and latent, can escape his notice. It is unnecessary to insist upon the prompt adoption of appropriate treatment whenever any signs of an internal phlegmasia make their appearance. But, even under such circumstances, depletions and evacuations must not be carried too far: for it should ever be kept in mind that there is a time for the use of cordials and tonics as well as for that of antiphlogistic remedies.

In illustration of the foregoing remarks, the following cases will perhaps be read with interest.

A sailor was struck in the arm by a large splinter of wood, which had been broken off by a cannon ball. The lower end of the left humerus, close to the condyles, was broken in several pieces, and there were two contused and lacerated wounds about the joint: the capsular ligament also was found to be ruptured. The two wounds were made into one by a transverse incision; the limb was placed in an easy extended position, and kept constantly irrigated with goulard water: the patient was bled twice in the course of the first day; and an opiate mixture was administered occasionally. On the third day, feverish symptoms setting in, another venesection was practised, and the same mode of treatment in other respects was ordered to be continued. On the seventh day suppuration commenced, and opiate cataplasms were therefore substituted for the cold irrigation. The purulent discharge became greater and greater, and hectic symptoms began to make their appearance. But these gradually subsided, when all the sequelæ of bone were discharged, and then the process of solidification and union went on favourably. In spite of all the endeavours of the surgeon to preserve some degree of motion in the joint, it became anchylosed. The arm, however, although stiff and motionless at the elbow, was of the greatest service to the patient, when he was discharged cured after six months' treatment.

In the management of wounds of the elbow-joint, M. *Reynaud*, chief surgeon of the hospital at Toulon, insists much on the good effects of frequently changing the position of the limb, and of moving it about in various directions towards the close of the treatment, so as to prevent the occurrence of complete anchylosis.

Case 2.—A sailor on board the *Trident* had his fore-arm crushed between a

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dry, it forms a firm case round the limb, so that the patient may move it about, or walk on crutches without any risk of displacing the bones. An abstract of a paper by M. *Velpeau*, on the use of this and other kinds of agglutinative bandages, in the treatment of fractured limbs, will be found in the Medico-Chirurgical Review, for July, 1838.

carronade and one of the yards of the ship: both the radius and ulna were broken in several places, and the soft parts were severely bruised and lacerated. By means of one or two incisions all tension of the injured parts was relieved, and a free opening was made for any splinters of bone to escape. Several of these were removed at the time, and the limb, being placed in a fracture box, was kept constantly irrigated with cold water, by means of a syphon which communicated with a jug at the side of the patient. He was bled twice in the course of the day, and cooling febrifuge medicines were administered. The progress of this case was most satisfactory. Several pieces of bone were discharged, and the purulent secretion becoming gradually less in quantity, the several wounds cicatrised. It was now found that a false articulation existed between the fractured ends of the radius, which it had not been possible to retain together in strict contact.

By, however, surrounding the limb at this part with numerous strips of plaster and then enveloping it with the starched bandage—which were kept on for forty days—a union took place. When the patient left the hospital, the fore-arm, although far from retaining its normal freedom of motion, was serviceable for almost every exertion.

The *third* case is one of extensive wound in the knee-joint.

A sailor fell into the hold of a vessel among pieces of broken glass, &c. One of the fragments had penetrated into the left knee-joint, and had caused a very large wound immediately below the patella. This bone was retracted upwards nearly three inches in consequence of the complete division of the patellar ligament. The internal lateral ligament also was partially cut across, and the capsular ligament of the joint was laid open so extensively that the articular surfaces of the femur and tibia were quite exposed. A small fragment of glass was actually imbedded in the substance of the crucial ligaments. This was removed, and the lips of the wound were brought together, the oozing of blood being stopped by the application of cold water. Wishing to save the limb if possible, M. *Cabissol*, the naval surgeon in attendance and the writer of the preceding remarks, adopted the following practice. The limb was laid upon a long splint which extended from the pelvis to the heel. The wound was united by means of four stitches, assisted by a bandage. A continued stream of cold water, by means of a syphon immersed in a jug placed above the patient, on the joint was perseveringly kept up, and the patient was bled from the arm. Next day sixty leeches were applied at some little distance from the joint, and the bleeding was repeated from the arm. From this date, there was no swelling, pain, nor fever, and by the twelfth day the wound was found to be cicatrised.

On the 22nd day, the cold irrigation was discontinued, and the joint was enveloped in the folds of the starched bandage, so as to retain it perfectly motionless, and promote anchylosis, the occurrence of which M. *Cabissol* considered to be inevitable. The patient was then permitted to move about on crutches. At the end of the sixth week, the knee had recovered its normal size, the patella had nearly descended to its right place, the divided ends of the ligament were united by a plastic nodosity, and there was still a slight power of flexion in the joint, so as to give grounds for hope that the anchylosis might not be complete.—*Bulletin General de Therapeutique.*

LUMBRICI DISCHARGED FROM AN UMBILICAL ABSCESS.

A youth of a leuco-phlegmatic temperament had been long confined to his bed with all the symptoms of *tabes mesenterica*—such as tumefaction of the abdomen, irregular appetite, feeble digestion, and an almost constant fever. He had been

in this state for upwards of a twelvemonth, when he began to experience sharp pricking pains over the left portion of the transverse colon, at about four inches from the umbilicus. In the course of a fortnight these pains became more severe; a circumscribed swelling made its appearance about the umbilicus, and this in the course of a short time proved to be an abscess. It broke of itself, and gave issue to a quantity of purulent matter. On the fifth day afterwards, a *lumbricus* worm escaped from the wound; and a few days subsequently another, and then another, so that at length five of these entozoa were discharged. Along with the last one, there was an issue of matter, which had a distinctly stercoral fœtor. No unpleasant symptom supervened; the abscess gradually healed up, and eventually the patient was restored to perfect health.—*Il Filiatre Sebezio.*

RUPTURE OF THE TENDONS OF THE TRICEPS AND RECTUS FEMORIS MUSCLES.

A man, 74 years old, fell forwards when mounting a flight of stairs and his left thigh struck against the edge of one of the steps: he could not rise.

Upon examining the limb, it was at once obvious that the common tendon of the triceps and rectus muscles was completely ruptured across immediately above the patella: the distance between the two separated ends was so great as to admit four fingers. The patient had lost all power of moving the limb in any direction. It was placed in an extended position, such as is adopted in treating fractures of the patella. In spite of some troublesome symptoms during the first and second weeks, the progress of the case was eventually very satisfactory; for at the end of two months the re-union seemed to be perfect, and the patient could raise the limb with tolerable ease from the ground; and, in three or four months more, he could walk up and down stairs without any difficulty or appearance of limping. The old gentleman died from an attack of apoplexy in the course of the following year, and Dr. *Martini* his medical attendant, was permitted to examine the body. He found that the re-union of the two ruptured ends of the tendon was effected by an intermediate semi-ligamentous substance, which was not more than an inch in breadth: there were no abnormal adhesions; but two or three very distinct cicatrices on the capsule of the knee-joint proved that it too must have been partially ruptured in more than one spot.—*Medicinische Corresp. Blatt.*

TREATMENT OF POISONING BY ARSENIC WITH STIMULANTS.

Royal Academy of Medicine, 30th July.

M. *Ollivier* communicated, in his own name and in the names of MM. *Amussat*, *Bouillard*, *Husson*, and *Lecanu*, a report upon a memoir of M. *Rognetta*, in which the author endeavoured to establish the comparative value of antiphlogistic and of stimulant means in the treatment of poisoning by arsenic. M. *Rognetta* had performed numerous experiments on dogs, the results of which went in his opinion to prove that the latter remedies were to be preferred; and that bleedings, &c. are in truth hurtful, as had been asserted in the writings of *Rasori* and *Giacomini* of Italy.

There were three sets of experiments; in one, a solution of arsenic was injected into the cavity of the peritoneum; in the second series, the salt in a state of powder was introduced into the cellular substance of the neck; and in a third set, a solution was injected into the stomach of the animal, and vomiting was prevented by tying a ligature round the neck.

1. All the dogs, in the first series of experiments, died in from 9 hours to 4 days, according to the strength of the solution that was used. Those, which were bled immediately afterwards and in which the venesection was repeated, died in a shorter time than either the animals to which tonics—consisting chiefly of a mixture of broth, brandy and wine*—had been given, or those to which nothing was done or administered.

2. In the second series of experiments, two dogs, to which nothing was done, and also the two dogs to which stimulants were given, died ; whereas two only out of the six dogs, which had been freely bled, died : the period of death in all varying from 8 to 12 hours after the experiment.

3. In those dogs, into whose stomachs the arsenical solution (from 6 to 14 grains) was injected, the mortality was as follows : of thirteen, which were bled once or several times, eleven died ; of thirteen, which were treated with stimulants and narcotics, only five died ; and of nine, to which nothing was either done or given, eight died.

It must be here noticed that of the eight dogs which recovered under the use of the stimulating and narcotic treatment, we have only sufficient data in reference to some of the most important features of all such cases—as, for example, whether vomiting took place, and if it was frequent and energetic. In four only out of the eight animals did vomiting—at least we are not informed to the contrary—occur. This want of information is certainly to be regretted ; as, in all experiments upon poisonous substances, it is of the very first importance to know whether the poison was entirely retained, or whether it was partially rejected by vomiting—more especially when the poison has been administered in a state of solution. Arsenic, when it has been taken for the purpose of self-destruction, is usually taken in a solid form, mixed up with some thick pudding substance. It thus attaches itself to the parietes of the bowels, and is much less easily detached and rejected than if it had been in a state of liquid.

Forty-seven dogs in all were subjected to the experiments ; of these 19 were bled, 20 were treated with stimulants, and 9 were left without anything being done. Of the first, 19, sixteen died ; of the second, 20, eleven died ; and of the last set, 9, eight died.

In addition to the lesser mortality among the dogs which were treated with stimulants, it was observed that they more quickly recovered from the effects of the poison than those which had been bled.† . . . . . The reporter, Mr. *Ollivier*, in conclusion proposed that M. *Rognetta* be thanked for his interesting communication, and be requested to continue his researches.

M. *Orfila* spoke to the following effect.

Before entering on the present discussion, I can assure you, gentlemen, that although an author on toxicology I am quite disinterested and free from all prejudices one way or the other. I have not advocated the adoption of blood-letting and the use of other antiphlogistic measures either indiscriminately or under all circumstances of poisoning with arsenic ; for it will be found on consulting my work, that, after quoting the cases related by some writers in favour of this mode of treatment, I have simply said, " I regard it as useful whenever symptoms of inflammation have made their appearance."

In estimating the value of any curative means in cases of poisoning, whether from arsenic or from other acrid substances, it is most necessary to remember that there are two periods in the treatment : in the *one*, we endeavour to expel

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* If this was rejected by vomiting, more was again given ; and if the vomiting was renewed, it was then given as a lavement. Occasionally some laudanum was added to the mixture.

† It results from the experiments of M. *Magendie* and other physiologists, that the detraction of blood encourages absorption.

or withdraw the poison from the stomach, and to neutralize by chemical antidotes* what may remain behind; in the *other*, our aim should be to counteract and subdue the symptoms which arise, whether of inflammation or of debility and exhaustion, of excitement or of stupor. These symptoms too, it is well known, vary much in different circumstances. In one case vomiting takes place very early, while in another it does not come on for some time; in one case the stomach is full at the time when the poison was swallowed, while in another it is empty; and so forth.

Now it is scarcely possible to imitate all these varying circumstances, when we give a poison to dogs in the way of experiment. If you give a feeble dose, they will generally vomit it up at once—and vomiting occurs in dogs with great readiness—and be quickly well again, so that scarcely any symptoms of poisoning are observed. This indeed is so frequently seen, that M. *Virey* went so far as to put the question whether arsenic was really a poison to dogs.

But to proceed to the statements of particular facts, I may mention that during the last five years eighteen cases of poisoning by arsenic, where bleeding was resorted to with success, have come under my notice; and M. *Villard* has given me the particulars of other five cases which were equally benefitted by the use of depletory measures.

I have also collected the reports of nineteen cases, which have been published in the English journals; carefully noting, among other circumstances, the occurrence or not of vomiting, the frequency with which bleeding was performed in each, &c. &c. and I find that one only of the nineteen patients died. It may also be noticed that the symptoms induced by an over-dose, or by a too-long continued use, of an arsenical preparation in the treatment of cutaneous and other diseases, are generally of an inflammatory or pyretic character, and require the employment of antiphlogistic remedies. All these facts clearly prove that bleeding and other similar measures are highly useful in certain cases, at least, of arsenical poisoning.

Now to come to M. *Rognetta's* experiments, we observe that all the dogs, in which a solution of the poison was injected into the peritoneal cavity, died, whatever course of after-treatment was pursued; and also that one of the animals, to which nothing was done, lived the longest after the experiment.

There is certainly less chance of being deceived as to the results of experiments, when the poison is introduced either into the cavity of the peritoneum or into the subcutaneous cellular substance than when it has been injected into the stomach, if the animal be allowed to vomit; and I (M. *Orfila*) regret therefore that M. *Rognetta* has not pursued his researches in this respect further.

But there is another consideration which it is most important to bear in mind in reference to the present discussion; and that is, when do we ever resort to bleeding immediately after the swallowing of a poison? On no occasion that I know of; for every one knows that *such a practice would only tend to accelerate absorption.*

Let it be also remembered that in 99 cases out of a 100 arsenic is taken in the solid state, when taken by or administered to any person; whereas it was given to the dogs in a fluid form.

In conclusion, M. *Orfila* stated that, while he did not pretend to affirm that depletory measures were necessary or suited to all cases of arsenical poisoning,

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* In poisoning from arsenic, M. *Orfila* recommends the use of the hydrated tritoxide of iron. The reader will find an account of the first experiments made with this ferruginous preparation in the Medico-Chirurgical Review for January 1837, and also the history of a case of poisoning alleged to be successfully treated with it, in the number for April 1839.

he was by no means satisfied of the superiority of a tonic mode of treatment by the results of M. *Rognetta's* experiments.*

M. *Dupuys* agreed with most of the remarks of the preceding speaker. The circumstances of the œsophagus not having been tied after the poison was given, and of the arsenic being in the fluid state, rendered the conclusions to be drawn from M. *Rognetta's* experiments of very doubtful authority.

M. *Bouillaud*—as all our readers know, a most ardent disciple of the Broussaian School—remarked, "I can scarcely believe that the fact of vomiting was the only cause of the difference between those animals which were bled or left to themselves, and those which were treated on the tonic and stimulant plan.

I must acknowledge that I was very much surprised at seeing the dogs swallow so greedily, and retain in their stomachs the alcoholic liquids, from which they suffer so much in a state of health. I was, to say the truth, in a new world of unexpected and most strange impressions, which were the more remarkable when I afterwards saw, on the dissection of the animals, the inflamed state of the gastric mucous membrane; while in those, which had been bled, there was scarcely a trace of inflammation. I repeat that it seems to me that the vomitings alone will not account for the successful effect of the stimulant treatment; for I am not aware that the one set of dogs vomited more than the other set which were blooded.

I do not wish to apply the results of M. *Rognetta's* experiments to what takes place in the human body, when arsenic has been taken in a poisonous dose; I confine my remark entirely to what I observed myself in the animals that were the subjects of the experiments; and I must again state it as my opinion that in all probability those dogs, which were treated with stimulants, would have perished more quickly if they had been left to themselves, and nothing had been done to them. It does not follow from these admissions that I reject altogether the employment of bloodletting, in cases of arsenical poisoning. On the contrary, I believe with M. Orfila that it is useful, nay, necessary, whenever reaction comes on.

This apparent inconsistency in my views will cease when I state it as my opinion that arsenic seems to me to act poisonously on the system in two very different ways; *first*, by exerting a specific influence on the blood, changing its properties, and thus giving rise to *adynamia*; and, *secondly*, by exciting an inflammatory and sthenic action in the parts to which it is directly applied.

M. Chervin mentioned that he had assisted at many of the experiments performed by M. Rognetta, and that the impression on his mind from what he saw was quite favourable to the employment of stimulants. At the same time he was ready to admit with M. Bouillaud that the peritoneal phlegmasia must necessarily complicate the results.

M. Emery stated that, at the Hospital St. Louis, where the internal exhibition of arsenic is sometimes pushed to the dose of a quarter of a grain, whenever any unpleasant symptoms arise, they are always of a more or less decided inflammatory character—such as quickened and strong pulse, sharp pains in the region of the heart, general feverish heat, &c. Along with these symptoms he has occasionally observed a partial paralysis of the extensor muscles of the hand. In all such cases he has seen benefit following the employment of bloodletting.

M. Amussat professed himself quite a convert to the views propounded by M. Rognetta, and stated that, if he had a patient suffering from the effects of a

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* At a subsequent period of the *seance*, M. Orfila alluded to two periods or stages in poisoning from arsenic; the *first* requiring the use of emetics and chemical antidotes, perhaps also of stimulants, if subsequent experiments confirm the results of those by M. Rognetta; in the *second*, bloodletting is *parfaitement indiquée.*

poisonous dose of arsenic, he should certainly give him stimulants, combined perhaps with narcotics.

M. Renaulden admitted the utility of general and local bleedings in cases where small doses of arsenic had been taken; but where the dose has been very large, perhaps all treatment is equally fruitless, and bleeding produces no better effect than any other remedy.

M. Marc was not ready to adopt the views of the preceding speaker in reference to the extreme rapidity of the danger and the fatal intensity of the symptoms whenever a large dose of the poison has been taken. He remembered having seen a woman who lived for eleven days, (during the whole of which time she was almost incessantly vomiting) after having swallowed an ounce of arsenic and two drachms of corrosive sublimate. Small doses of poison will often cause death much more rapidly than large ones.—*Memoires de l'Academie.*

Remarks.—The facts elicited in the discussion, of which we have now given a brief account, are highly interesting, and will suggest some useful hints in a practical point of view. We cannot indeed expect to discover any remedial means which hold out much prospect of constant, or even of very frequent, benefit in poisoning from large doses of arsenic. Not only is the depression of the nervous and circulatory system often fatally great, but there is at the same time such structural disorganization of the stomach and bowels induced by the contact of the poison when it has been swallowed, that there cannot be the slightest chance of ultimate recevery. *The action indeed of arsenic seems to be partly irritant and partly narcotic.* It is doubtful whether the latter effects are attributable to a direct influence on the heart, or to a primary influence on the nervous system. In the experiments of Brodie and others, it was always found that the action of the heart was excessively feeble, although other muscular parts, including the intestines, nearly retained their usual irritability. The collapse and prostration have in many cases seemed to be much greater when the poison was applied to an external wound than when it had been taken into the stomach.

That arsenic seems however to have an almost specific tendency to irritate and inflame the gastric surface, appears from the well ascertained circumstance, that, in several cases of fatal poisoning from its external application, the mucous membrane of the stomach and bowels has on dissection been found highly vascular and even ulcerated. On the other hand, several fatal cases are recorded where no such appearances have been discovered, even although the poison had been swallowed. On the whole, we may conclude that the salts of this metal are narcotico-acrid poisons—acting as debilitants and sedatives of the nervous and circulatory functions, and as stimulants and violent irritants of the surfaces to which they are directly applied.

The following paragraph from Dr. Christison's classical work on poisons furnishes an apt commentary on the whole subject.

"The symptoms of poisoning with arsenic may be advantageously considered under three heads. In *one* set of cases there are signs of violent irritation of the alimentary canal and sometimes of the other mucous membranes also, accompanied with excessive general depression, but not with distinct disorder of the nervous system. When such cases prove fatal, which they generally do, they terminate for the most part in from 24 hours to three days.

In a *second* and very singular set of cases there is little sign of irritation in any part of the alimentary canal; perhaps trivial vomiting or slight pain in the stomach, sometimes neither; the patient is chiefly or solely affected with excessive prostration of strength and frequent fainting; and death is often delayed beyond the fifth or sixth hour.

In a *third* set of cases life is commonly prolonged at least six days, sometimes much longer, or recovery may even take place after a tedious illness; and the signs of inflammation in the alimentary canal are succeeded or become accom-

panied about the second or fourth day, or later, by symptoms of irritation in the other mucous passages, and more particularly by symptoms indicating a derangement of the nervous system, such as palsy or epilepsy.—*Rev.*

Experimental Researches on the Oxydes of Iron as Antidotes of Arsenic.

The readers of the Medico-Chirurgical Review (vide number for January, 1837) are aware that a German chemist, M. *Bunsen*, has proposed the hydrated peroxyde of iron in a moist state as an antidote to arsenical poisoning.

The value of the remedy has been confirmed by several other experimenters; and as the compound formed by the union of the two metallic salts is quite insoluble and inert, there is every reason to believe that, if a complete union could take place in the stomach when the poison has been swallowed and before it has produced its deleterious effects, many a life might be saved. As far as we know, there is only one case on record where the peroxyde has been used in the human subject; and in that case it was used with success. It is reported in the Revue Medicale, and an account of it was given in one of our recent numbers.* The only objection that has been made against the moist peroxyde is the tediousness of preparing it, its inconvenient bulk, and the difficulty of keeping it for a length of time.† A committee was recently appointed by the Society of Medicine to examine the subject in all its details, and to endeavour to discover a substitute for the moist peroxyde recommended by M. *Bunsen*.

The report of this committee has been published, and we shall extract one or two of its most important paragraphs.

After a few prefatory remarks, it is stated, "we do not hesitate to assert that the arsenious acid is *victorieusement combattu*, not only by the moist peroxyde of iron proposed by M. *Bunsen*, but still more effectually and more easily at the same time by the dry hydrated peroxyde—the subcarbonate of iron of the chemists.

This is readily prepared by precipitating the proto-sulphate of the metal by carbonate of potash and washing the precipitate repeatedly. By exposing it freely to the air during desiccation, it becomes completely oxydated, loses its carbonic acid, and is then in short a dry hydrated peroxyde:—100 drachms of this precipitate, when calcined, yield 69 drachms of an anhydrous peroxyde.

The reporters acknowledge that the wet preparation recommended by M. *Bunsen* has in many experiments fully answered the promises held out by that chemist, provided it be administered in sufficiently large doses. But, as we have already said, the objection to this preparation is the length of time required to make it, and its most inconvenient bulk. If therefore the dry peroxyde will answer as well, it must be, considering the facility with which it may be obtained, altogether preferable. Now in numerous experiments performed by the reporters, its antidotal efficacy was very remarkable when the dose of the poison had not exceeded four or six grains.

The first thing to be done is to encourage vomiting as freely as possible. But

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* Vide Medico-Chirurgical Review, April 1839.

† The mode of preparing it is by peroxyding a solution of sulphate of iron by the means of nitric acid with the aid of heat, and then adding pure liquor ammoniæ: the supernatant liquor is to be drawn off the flocculent precipitated peroxyde; and fresh water must be poured on it and decanted off several successive times. The process requires, according to M. *Guibourt*, four or five hours.

in doing this, the patient should be made to drink copiously of milk or of oil, and not of water, to prevent the further solution of the poison. Whenever the vomiting is carried as far as is deemed advisable, a quantity of lukewarm water, in which several ounces of the dry peroxyde of iron are suspended, should be administered. If it is rejected by vomiting, so much the better; we have only to repeat the dose immediately.

The Committee suggest that half an ounce of the dry peroxyde should be given for every grain of the arsenic that may be in the stomach.

For the particulars of the experiments, chemical and physiological* (on dogs), for the purpose of determining the effects of the peroxyde in neutralizing arsenious acid, we must refer our readers to the numbers for May and June, 1839, of the—*Revue Medicale.*

ON THE DETECTION OF ARSENIC IN THE BLOOD, FLESH, AND VISCERA, AFTER DEATH FROM POISONING.

M. *Orfila* has, for the last two years, been engaged in a series of experiments to determine whether the presence of arsenic can be detected in the blood and the solid parts of the body after death in cases of fatal poisoning. During last year, he submitted to the attention of the Royal Academy of Medicine a chemical process—which consisted in treating the parts subjected successively with nitrate of potass, sulphuric acid, and with potassa and alcohol—for this purpose. It is however very tedious and also uncertain; and he has therefore substituted another, which he deems to be a great improvement: it is the following.

Take the liver, spleen, lungs, or a certain quantity of the blood of the animal, that has been poisoned with arsenic, and dry them thoroughly. The dried mass is then to be treated in the heat with concentrated and purified nitric acid; in the course of a quarter of an hour or so the whole mass will be dissolved.—The liquor is concentrated; a dark point appears, and soon the carbonisation is complete. It is then to be treated with cold water. The solution is introduced into *Marsh's* apparatus and submitted to the hydrogen test.

In performing the experiments, we must carefully be upon our guard not to raise the temperature of the mixture too high, and also not to use too large a proportion of nitric acid. If more than sufficient be used, the flame is too vehement; and almost all the arsenic will be destroyed. Again, if the heat applied be not sufficient, the carbonisation is not complete, and a disagreeable pyrogenous odour, similar to that of burnt horn, is emitted. Several hours are required for the experiment; and sometimes, even with the greatest care and dexterity in performing it, a portion of the arsenic is lost.

The following are the proportions of nitric acid recommended by M. *Orfila*, to be used with the different parts of the body submitted to the experiment. For three ounces of dried blood, seven ounces of the acid are required; for one ounce of dried gelatine, one ounce of acid; for three ounces of the residue obtained by decoction of the limbs, nine ounces of acid; for six ounces of dried cerebral matter, four ounces of acid; and for all adipose matters, a very large proportional quantity of the acid is necessary. Twelve ounces of dried liver require thirty-four ounces of acid; whereas twenty-two ounces of muscle require only sixteen ounces.

By following the proportions now given, and provided at the same time care

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* It is mentioned in the report that *small doses of arsenic*, say four or six grains, *proved more quickly fatal than larger ones*, as from 12 to 40 grains. The absorption seems to go on more rapidly when the dose is small.

has been used in effectually drying the substances submitted to experiment, *ou est sur de reussir presque constamment.* We may not indeed succeed in recovering all the poison, but much less will be lost in this than in any other way.

M. *Orfila* gave the particulars of the following instances, in which he had successfully practised the method now described.

1. In a dog, which died after having swallowed 12 grains of arsenic, all the organs were submitted to the experiment; and in every one of them traces of the metal were discovered.

2. The liquid obtained from the decoction of the limbs of *Soufflard*, although previously treated with sulphuric acid, gave the same results.

3. Very recently in the case of a man of the name of *Lorrain*, who died after having taken a large dose of arsenic, a part of his limbs being treated with nitric acid and carbonised, and then submitted to the proper tests, furnished the well known signs of its presence.

4. The same was the case in the liver taken from the body of the man *Mercier*.

5. Lastly, in a woman who poisoned herself a month or two ago, equally satisfactory results were obtained by experimenting on ten ounces of blood which had been taken from the arm. This patient recovered.—*Memoires de l'Academie.*

If the expectations of M. *Orfila* be confirmed by the researches of other physicians, the science of toxicology will have achieved a most important discovery. It is well known that if a person, to whom a poison has been given, survives for several days, perhaps no chemical traces whatever of its presence in the stomach or intestines will then be detected on dissection, although the death has been indisputably owing to its effects. The poison has in fact been absorbed and taken into the circulation. That such is the case with arsenic, if the quantity taken has not been excessive, cannot now be questioned for a moment; as M. *Orfila* has succeeded in detecting it not only in the blood, but in almost every one of the solid textures of the body, when all traces of its presence in the intestines had disappeared. The following illustrative case will be read with interest.

On the 22nd of December, 1838, a man died at ——, with all the symptoms of being poisoned. He was however buried, without any examination having taken place.

A fortnight afterwards, the body was disinterred, and submitted to anatomical inspection. The intestines exhibited all the usual lesions characteristic of poisoning by arsenic. Their contents were examined with great care by some experimental chemists; but no traces of arsenic could be detected: the body was again buried. Fresh suspicions however having arisen about three or four months later, M. *Orfila* was then consulted. The body was again taken up and sent to Paris for the purpose of being examined by him. It was in a state of complete decomposition at the time: the stomach and intestines no longer exhibited any traces of their original structure, and all the other parts were more or less disorganised. Notwithstanding the circumstance of the body having been twice exhumed, and submitted to all the mangling of a *post-mortem* examination, not to mention its decomposed state from petrefaction, M. *Orfila* succeeded in detecting the presence of arsenic in the liver and in the limbs, as well as in the water of the barrel in which the rest of the body was kept.

We may also mention that he has obtained unequivocal traces of this metal in the blood, which had been taken from the arm of a patient to whom this poison had been given. It is therefore of great consequence to withdraw a certain portion of blood from the arm in all cases of suspected poisoning.

We must not however forget that, according to some recent analyses of animal bodies, it would seem that there is a minute quantity of an arseniate of lime in the bones, and perhaps also in some of the other textures, in the healthy state. M. *Orfila* admits the truth of this statement himself, but he has pointed out, at the same time, how the fact does not affect the results of medico-legal enquiries.

His experiments clearly show that the natural arsenical compound is not soluble in boiling distilled water, (kept constantly neutralized by an alkali,); whereas, on the contrary, the poison, absorbed into the circulation and disseminated through the organs of the body, is readily extracted by boiling for some hours in water.

We need scarcely say that it is of the utmost importance that the chemist should be most careful as to the purity of all his vessels, whether metallic or earthenware, and of all the chemical tests and agents which he uses, in any medico-legal examination to detect the presence of arsenic in animal bodies. A minute portion of this metal has, for example, been occasionally found in the sulphuric and nitric acids of commerce; also in vessels of iron and tin: and, lastly, in the composition of certain soils.—*Gazette Medicale.*

M. MAGENDIE ON THE ALTERATIONS OF THE BLOOD IN DISEASE.

M. *Magendie* in his lectures on the Physical Phenomena of Life recently delivered in Paris, has, it may be supposed, carried all his favorite doctrines *a l'outrance.* It is not an easy matter to give the reader an idea of the contents of these lectures, as they embrace so many topics, and are mainly taken up with the record of numerous experiments on living animals—poor brute creation—and of the conclusions which our author has deemed that these experiments warrant.

His great aim seems to be to account for most of the phenomena of life by the same laws which are found to operate on dead or inorganic matter. Thus, for example, the function of absorption—hitherto regarded as a vital act—is attributed altogether to what our author terms *inhibition*, another phrase for capillary attraction. How he can reconcile this notion with the manifestly *elective* power of the lacteals in absorbing certain matters and rejecting others, does not very clearly appear; but M. *Magendie* has a most convenient way of getting rid of difficulties—he only denies the truth of the objection, and challenges implicit reliance to all his own statements.

As an instance of this very comfortable self-assurance, he takes for granted that his favorite dogma of the veins being the proper, indeed the only, absorbing vessels of the body is assented to and admitted by all physiologists—although there is, perhaps, not a single one in Europe who agrees with him to the full extent on this point. Again, he boldly hazards the assertion that all poisons act *solely* by being absorbed into the current of the circulation, and that the rapidity of their operation is always proportionate to their solubility, and the facility with which they may be absorbed.

Such an assertion is, we need scarcely say, quite at variance with the opinions of the most able physiologists as to the *modus operandi* of prussic acid, opium, tobacco, and such like poisons.

The highly important and curious subject of contagion occupies a considerable share of M *Magendie's* attention.

Here, again, he is at issue with most of his brethren. The French quarantine, it would seem, recognises (we will not say with what propriety) five contageous diseases—plague, typhus, yellow fever, cholera, and leprosy. According to our author, "The contagion of the last four of these diseases is positively denied by every intelligent physician.

It is quite amusing to observe the cool assurance with which this *dictum* is put forth.

To pass to the hitherto obscure subject of the ætiology of typhus and yellow fevers, M. *Magendie* at once solves the difficulty, by informing us that we have only to inject into the circulation of an animal a few drops of putrid animal

matter, and then we shall have all the symptoms of these diseases manifested. Hence, says he, we may reasonably conclude that the cause of these fevers must be the absorption into the system of the miasm arising from decayed animal matters. In proof of the truth of this, he alludes to the instance of a vessel laden with fish from Newfoundland, which was stranded on some part of the French coast; the fish putrifying, the neighbouring village became the focus of a pestilential typhus fever; and this continued to rage, until the putrid fish was washed into the sea.

This reasoning will not satisfy the medical logician that there are no other causes of yellow fever, but the miasma of decaying animal matter. M. *Magendie* entirely omits from his consideration the influence of marsh miasmata; but for what reason we do not well know, except that such an admission does not quite accord with his theories.

But, while objecting to the dogmatic tone of the assertions of our author, let it not be supposed that we regard them as altogether visionary and untrue.

It has long appeared to us that the various theories which have been proposed, during the last half century, to account for the phenomena of pestilential fevers cannot stand the test of rigorous examination, and that the leading and essential defect in them all is that the changes in the circulating fluid have been too much overlooked. It has unwisely been attempted to refer every symptom and phenomenon to changes in the solids alone; and thus the practice, which has been based upon this supposition, has been directed almost exclusively to mitigate or remove such changes. The Broussaian school has urged this doctrine to the most *outré* and the most pernicious extreme. A new state of things seems about to succeed.

That a modified and restricted system of humoral pathology has been springing up of late years in France, as well as in our own country, is no doubt well known to all our readers. In the last number of this (the Medico-Chirurgical) Review, we gave a brief notice of a clever paper by M. *Raciborski* on the state of the blood in inflammatory and in typhoid diseases, and we then quoted the opinions of that admirable pathologist, M. *Andral*, in confirmation of the writer's views.

In his recently-delivered lectures on the blood, M. *Magendie* has carried this, as he usually does every other, notion to a most extravagant length, and he treats with the utmost contempt the researches of modern pathology, or pathology of the mere solids, which he designates as a mere chaos and a science which yet remains to be created. He seems to think that no advantage can result from morbid anatomy of the solid parts alone, unless a scrupulous attention be given at the same time to the state of the fluids of the body. In proof of this he appeals to the history of fevers.

The rapidly fatal progress of some he attributes to a sudden alteration in the constitution of the blood itself: and, in this respect, he adopts very nearly the views of the older humoral physicians, *Van Swieten*, *Huxham*, *&c.* "For example," says he, "a woman was brought into the Hotel Dieu with all the premonitory symptoms of some severe acute diseases—it was believed to be of variola. In the course of the afternoon, the state of the patient became suddenly much aggravated; *purpura* shewed itself, and death supervened within 30 hours.

Now the phenomena found on dissection in this case were exactly the same with those which I have repeatedly shewn you in the bodies of animals, into whose circulation I had injected some poisonous or putrid fluid.

In such cases, and in similar rapidly fatal diseases, the blood we find has lost its property of coagulating when drawn. Now—what seems rather strange at first—whenever this condition of the blood exists, the circulation appears to be more seriously embarrassed than from any other cause."

A few remarks on this topic may be interesting, and explain the circumstances here alluded to.

When we consider that the blood consists of a fluid which holds in suspension numerous globules of a determinate size and form, and when we compare the size of these globules with the excessively small calibre of the capillary vessels through which they pass, we are surprised that the circulation can go on so evenly and uninterruptedly as it is known to do.

Our surprise must be increased when we find that fluids of much less dense composition than blood, nay that pure water itself, cannot be made, even when considerable force is employed with the injecting syringe, to pass readily from the arterial into the venous set of vessels after death. True, we must bear in mind that the living textures of the body may have properties and have powers of accommodation, which are, in a great measure, lost after life is extinct; but still it will be admitted as a remarkable fact that fluids of thinner consistence than blood should find so much difficulty in passing through the minute vessels.*

The explanation—at least in part—of this circumstance would seem to be that, whenever the tenuity or thinness of the blood is greater than in health, there is a marked tendency to its exuding from the minute vessels, and thus becoming extravasated into the adjoining tissues. But whether this explanation is correct or not, it is quite certain that any change in the composition of the blood is immediately followed by a disturbance of the circulation, and by a series of morbid symptoms which are found to vary according to the nature of the change. If the blood has become thinner, there will inevitably surpervene either engorgement or even inflammation of some organ or organs, or œdema, or purpurous patches, &c. Now let us consider what are the conditions of the system, and what are the causes which induce a preternatural thinness of the blood, —premising that the consistence of this fluid depends chiefly on the proportion of the fibrine to the other ingredients.

I will mention to you, says M. *Magendie*, addressing his pupils, an experiment, which I have repeatedly performed :—

If any substance, which will unite and form a compound with the fibrine, be injected into a blood-vessel, the blood will very quickly lose its power of coagulation. Now any of the alkalies will effect this; they combine with the fibrine and form *fibrinates;* and the consequence of this combination is that the fibrine will no longer coagulate, when the blood is drawn and allowed to rest.

This experiment shews that the blood may lose its property of coagulability, without any necessary deficiency in the quantity of fibrine from some abnormal change in its properties. It is, therefore, not to the mere diminution of the quantity of this ingredient, so much as to a change in its properties, that we are to ascribe what has been called a *dissolved* state of the blood. Such a change of the circulating fluid exists in all malignant fevers; and it is owing to the difficulty and embarrassment of transmission which this altered blood must experience—as explained in the preceding page—in the capillary vessels, that œdema, congestion, inflammatory engorgement, hæmorrhages, petechiæ, and other similar symptoms are so frequently observed in these diseases. The pathological

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* M. *Magendie* says, that, whereas water cannot be made, by any force of impulsion, to pass through glass tubes of less than one-tenth of a *millimetre* in diameter, the diameter of the capillaries does not exceed one-eightieth or even one-hundredth of a *millimetre*. If we inject water into the mesenteric artery of a frog, a very small portion only will reach the mesenteric vein, the greater part having become effused into the surrounding textures. M. *Magendie* suspects that *Ruysch*, the Dutch anatomist, who acquired so high a repute for his minute injections of the blood-vessels, probably made use of some fluid which had some analogy in point of consistence with the blood itself.

appearances found in the lungs, brain, intestines, &c. are all *primarily* attributable to an altered state of the blood; in consequence of which, this fluid has exuded through the capillary vessels in certain parts.

It is therefore of first-rate importance to ascertain the condition of the blood in the early stages of these fevers, as we may be quite assured that their fatality will be always proportionate to the extent or degree of the changes now alluded to.

For this purpose M. *Magendie* has for some time past been much in the habit of employing *saignées exploratives* or very small bleedings, with the view of determining the physical and chemical conditions of the blood, and more especially that of its coagulability. His prognosis of the case is greatly influenced by the results of such an examination.

The causes, which most frequently diminish the coagulability of the blood, are certain conditions of the atmosphere, aerial miasms, certain gases, unnutritious food, alkaline medicines, &c. A dissolved state of the blood is also usually met with in persons who die from lightning, and from the fumes of carbonic acid.

It is from the absorption of the deleterious miasms, which arise from the decay of animal and vegetable substances, into the circulation and from the consequent alteration of the blood, that we are to trace all those pestilential fevers endemic in hot climates, and in the close filthy localities of large towns. The black vomit of the West Indies is well known to proceed from an exsudation of the altered blood from the capillaries of the stomach and duodenum. The bloody stools, the petechiæ on the skin, the ecchymosed spots on the lungs, &c. are all very striking proofs of the same morbid state.

We have said that, according to M. *Magendie*, alkaline medicines have a tendency to attenuate the blood, in consequence of their combining with its fibrine and rendering it less viscid.

Acids on the other hand—at least some, and among these the sulphuric is one—are found to increase the viscidity of the blood. Now it would seem—however strange and apparently inconsistent it may strike the mind at first—that similar morbid phenomena are induced by these opposite states of the circulating fluid. Both these states have a tendency to give rise to inflammations and congestive *engouements*. When the blood is too viscid, it cannot permeate the minute vessels: these become obstructed in consequence, and the usual train of symptoms of local inflammation ensue. On the other hand, when the blood is too much attenuated, it exsudes from the capillaries; and thus engorgement and swelling are induced. M. *Magendie* alludes particularly to the tendency to pneumonic congestion, whenever this state of the blood is present: indeed, he carries the dogmata of the humoral pathology even farther than the disciples of Boerhaave and Van Swieten did.

We need scarcely inform our readers that we cannot assent to the opinions of M. *Magendie* on the subject of inflammation. With a few grains of truth there is a bushel of gratuitous assertions. That however he has succeeded in showing that not a few of the phenomena, which have been regarded by so many of his countrymen of late years as infallible signs of existing inflammatory action, are in truth indications of a dissolved and attenuated state of the blood, we are most ready to admit, and to give him praise and credit for.

Let not therefore the mind of the young practitioner be too much pre-occupied with notions of active or sthenic inflammation, whenever he finds, either during life or on dissection, the capillaries of certain parts engorged and distended. Such appearances are, as M. *Magendie* correctly states, often the effects of an attenuated condition of the blood.

If such then be the case, the inference is at once obvious that the detraction of blood and other depletory measures under such circumstances must necessarily aggravate the danger of the patient. No one can doubt that much mischief

has been caused by the indiscriminate adoption of such a mode of treatment in all febrile disorders. We cannot enter upon this most important subject at present, and will therefore refer our readers to some valuable practical remarks by M. *Lombard* of Geneva, which will be found in the Foreign Periscope of our last number. We gladly however avail ourselves of the present opportunity of directing the attention of all to an admirable paper on the treatment of typhus fever by stimulants, which appeared from the pen of Dr. Stokes in a recent number of the Dublin Journal.

This accomplished physician has there pointed out with great judgment the aid, which may be derived from auscultation of the heart, in determining the line of practice to be adopted in certain malignant fevers. Whenever its impulse is weaker, and its sounds are fainter and less distinct than in health, we may with confidence, says he, administer stimulants, however much other symptoms may seem to contra-indicate their use.

Dr. *Stokes* strongly recommends that the action of the heart, much more than the state of the arterial pulse, should be carefully and regularly examined in the progress of fevers. The truth of the remark may be extended with great benefit to the therapeutic management of many other diseases. The information which we thus acquire of the energies of the system, is much more exact than can be obtained from the mere examination of the pulse. Dr. *Stokes* has adduced the reports of numerous cases, with the view of showing how the impulse and the sounds of the heart become gradually more and more healthy under the use of large doses of wine and brandy, and how he was thus enabled to guide his practice in cases, where the patient was laying comatose and oppressed with all the symptoms of malignant fever.

In not a few of the cases, upwards of a bottle and a half of wine was administered in the course of four and twenty hours.

ON THE DIAGNOSIS AND TREATMENT OF STOMACH DISORDERS.

The object of the subsequent remarks is to point out the variety of stomach ailments and diseases—very different from each other in their nature and each requiring very different modes of treatment—which have of late years, and more especially among my countrymen, been most erroneously blended together and arranged under the term *gastrite chronique*.

"Every one," says Professor *Debreyne*, "knows that the great multitude, or rather the apparent frequency of chronic gastritis arises, on the one hand, from the extravagant extension of the principles of the self-called *physiological medicine*, and on the other hand, from the prepossession in the minds of many practitioners in favour of the system of universal irritation, and therefore in favour of antiphlogistic remedies in treating them.

All pains and disorders are attributed by these men to chronic irritation or inflammation of the gastric mucous membrane. Whenever the tongue is somewhat redder than usual, and there is any uneasiness in the epigastric region, loss of appetite, and irregularity of bowels, recourse is had at once to leeches, gummy drinks, and a starving regimen.

..... A disciple of the *physiological*, or Broussaian school, sets himself to treat a case of chronic gastritis. He recommends—and very properly—the remedies just now mentioned. Next day the symptoms are relieved; but as there is still some tenderness in the epigastrium, the leeches are ordered to be repeated. Again relief is experienced. The epigastric pain however continues from day to day in spite of the vigorous depletory treatment. The patient too becomes gradually weaker and weaker; his pulse quickens, and a slow fever is lighted up in his system; while all the while the appetite is pretty good, or even

craving. We need not pursue such a history, as we shall presently point out how such a case should be treated.

..... A second patient presents himself, labouring under atony of the stomach, which is usually characterised by derangement of the digestion, and uneasiness or even actual pain in the epigastric region.

Now this is often considered a case of chronic gastritis; and it is also treated with leeches, low diet, &c. The immediate result of this treatment is an increase of the general weakness. Perhaps however the epigastric uneasiness is relieved—a most deceptive sign of real amendment, and one likely to mislead the inexperienced practitioner. Probably the application of the leeches is repeated, under the mistaken idea that there is still some lurking inflammatory irritation.

..... Now let us take another case, that of a patient affected with gastralgia, or gastrodynia. In such cases, along with the severe pain in the region of the stomach, there is usually loss or impairment of appetite, and other symptoms of a disordered digestion.

There can be no mistake here, it will be said by the *physiological physician* that a genuine gastritis exists. Numerous leeches are therefore applied, and a most strict *diete* is enjoined.

Now almost every pain—whether phlogistic, rheumatic, neuralgic, or even atonic—is relieved for a time by the application of leeches in the neighbourhood of the affected part. In neuralgic and atonic pains, the relief is however delusive and only temporary; for next day, or even sooner, they are as severe as ever. If this mode of treatment be therefore continued, the patient's strength is more and more exhausted, and the disease probably aggravated at the same time.

..... Then again consider the symptoms of a patient affected with scirrhus or incipient cancer of the stomach. He suffers from a sense of continual weight, and from a dull and deep-seated pain, especially when the stomach is empty, from most troublesome flatulence, acidity, frequent vomiting of a glairy matter, constipation, &c. The antiphlogistic treatment—under the impression that the case is one of chronic gastritis—is followed by nearly the same effects as, we have pointed out, are apt to follow in atony of the stomach.

..... Lastly, in cases of ordinary *embarras gastrique*—characterised by loss of appetite, a bitter taste in the mouth, a coated tongue, nausea, vomiting of bilious matters, sensibility of the epigastrium, headache, &c.—the physiological physician has often been sadly in error in supposing that the antiphlogistic treatment was at all necessary for its relief.....

Dr. *Debreyne* then details with great minuteness the chief diagnostic symptoms of each separate case.

In treating of *genuine* chronic gastritis, he dwells particularly on the assistance which may be derived, in discriminating the disease, from watching the effects of different sorts of food upon the severity of the symptoms. 'Whenever,' says he, 'a farinaceous and milk diet is well borne, or at least is better borne, and causes less uneasiness than any form of animal food, even that of simple broth, we have strong reason to suspect the presence of some degree of inflammation. This symptom may be considered as a sort of touch-stone, by means of which we may in general distinguish the irritative from the purely nervous and atonic affections of the stomach. True, it is not an infallible indication; but it is certainly one of the greatest value to assist our correct diagnosis. Of this we may be assured, that whenever an animal diet suits a patient better than a vegetable one, the case is not one of gastritis.'

Now for a word or two respecting the treatment of *genuine* chronic gastritis.

As a matter of course, local detraction of blood, spare diet, refrigerants, &c., are to be used. But if after a due employment of these means, the pain of the stomach still continues, we are not to persevere in the same practice indiscriminately. The pain may now be rather of a nervous than of an inflammatory

character; and, if there be good reason to suspect this, a mild opiate in a mucilaginous vehicle will be far more serviceable than further bleedings.

Opium is however, on the whole, much less efficacious in gastritis than in enteritis or in dysentery. We should not persevere in its use, if the pain does not yield in the course of two or three days. Under such circumstances, let a blister be applied upon the epigastrium. Should the pain resist this as well as the opiates, we may then regard it as of an atonic character. Attention to the effects of food, animal and vegetable, will assist our diagnosis in this respect, as already explained.

Small doses of rhubarb or calumba, either alone or conjoined with sedatives, such as hydrocyanic acid, minute doses of morphia should now be tried. A low feverish state is apt to follow a too-long protracted use of depletory and debilitant remedies.

Atony of the Stomach.—This disease is of not unfrequent occurrence, especially in women affected with leucorrhœa, chlorosis, anæmia, &c.

It is unnecessary to particularise its symptoms, as all the phenomena well known under the too-comprehensive term 'dyspepsia' may be present. Even pain, aggravated too on pressure, in the epigastrium, is not uncommon. One important character is, that the distress of the stomach is usually increased by the use of vegetable and farinaceous food, and relieved, more or less, by a generous diet of animal meat, wine, &c.

Neither opiates nor antiphlogistics are suited to such a case; tonics alone are the proper remedies.

There may indeed be a certain degree of inflammatory or of neuralgic pain blended, so to speak, with the atonic pain, which is the prevailing element in the cases now under consideration; and then indeed it will be necessary to modify our treatment, combining the use of occasional leechings and anodynes with the tonic plan. An animal diet of the lighter and white meats at first and subsequently of the stronger ones, the use of some mild ferruginous preparation, of quinine, or some other vegetable bitter, such as gentian, calumba, aloes, &c. in the form either of infusion or of wine, constitute the most approved practice.

In a variety of gastro-atony—characterised by frequent returns of vomiting—there is no remedy more useful than calumba in the form of powder, five or ten grains taken three or four times a day. If the epigastric uneasiness should be troublesome, a mild opiate preparation may be mixed with it.

The patient should be advised to take but little of any watery drinks, such as tea, gruel, &c. Seltzer water is a good beverage.

Gastrodynia and Gastralgia.—The first of these terms should be applied to such pains in the stomach as are of a rheumatic, and the second to such as are of a purely neuralgic nature. The pain in both is almost always much more severe than in a genuine chronic gastritis; and yet it is usually not increased, but is often relieved, by pressure on the epigastrium. Moreover, there is no feeling of heat, nor is there much thirst, and the pulse is not quickened. Generally there is but little derangement of the digestion; and almost all kinds of food may be taken, without any decided effects either as to increasing or mitigating the pain. In genuine gastrodynia we can usually discover that there has been the retrocession or transport of a previous rheumatic affection of some of the joints, &c. Hence a certain degree of phlogistic action may be coexistent with the pain;—not so however with *gastralgia.*

As to the treatment, opiates are on the whole the most efficacious remedies. In many cases they require to be administered in large doses. Some of the diffusible antispasmodics, such as æther, camphor, the liquor of Hoffmanni, &c. are often useful. The sub-nitrate of Bismuth is an admirable preparation in numerous cases. Sometimes, more especially where the disease is of a rheu-

matic character, the use of blisters, applied either to the epigastrium or to one of the lower limbs, is necessary.

We shall close these remarks with a few words as to the use of opium in painful affections of all sorts of the digestive canal. There is no remedy so generally beneficial, nay, even necessary, as opium in such affections; as, for example, in cramps, colicky pains, dysentery, as well as in gastralgia. In some cases, it must be associated with bloodletting; in others, with laxatives and emetics; and in a third set, with bitters and tonics. Medical men have been, especially during the last thirty years, far too timid in the employment of this admirable remedy in the treatment of disease. They forget that often, very often, Nature only requires to be freed from present pain, to enable her to restore a disordered function to a healthy condition, and a suffering organ to the regular performance of its duties without distress or inconvenience.—*Revue Medicale.*

M. RICORD ON THE TREATMENT OF THE VARIOUS STAGES OF SYPHILIS.

In the Foreign Periscope of the last number of this (the Medico-Chirurgical) Review, there is a brief paper on the views which M. Ricord, the experienced surgeon of the Hôpital des Veneriens at Paris, entertains on some of the most important topics connected with the history and treatment of syphilitic diseases. He has adopted a new arrangement of their phenomena, by dividing them into three, in place of two—as hitherto—groupes or classes; viz. the *primary*, the *secondary*, and the *tertiary*. The following observations are extracted from a paper which M. Ricord himself has recently published in the Bulletin de Therapeutique.

"One of the reasons, which has given rise to so much confusion and misunderstanding as to the proper nature of venereal diseases, is the vain attempt of seeking in one single and identical cause, to which they might all be referred, effects which are uniform and constant, and such as might be remediable by the same therapeutic means.

If it had been only once admitted that in many *reputed* venereal affections, there are some which are quite foreign to, and independent of, the primary and genuine disease, no difficulty would have been experienced in arriving at a more correct and more successful diagnosis and practice.

Besides this important consideration, there is another of equal importance, both in a diagnostic and in a therapeutic point of view; and it is this. Even in genuine syphilitic affections, the phenomena are by no means always the same. Much depends on the duration of the disease, on the tissues affected, on the constitution or idiosyncrasy of the patient, on the diseases which he has had before, &c. &c. Now all these varying conditions require corresponding modifications in the treatment.

By far the best arrangement of syphilitic affections is into *primary*, *secondary*, and *tertiary*. The *first* includes only those phenomena or symptoms which are produced by the direct local effect of the venereal poison. In the *second* stage or phasis, the morbid principle taken up by the absorbents becomes the cause of a general or constitutional poisoning, the effects of which are multiplied and various. These effects are twofold. In some *secondary* affections, the poison still retains its primary and peculiar characters, and is capable of communicating the disease by inoculation or by direct contact; while in others, this property of contagiousness no longer exists, but another characteristic property—that of communicability from parent to offspring—has been acquired.

In the *third* phasis or stage, the disease has lost alike its contagiousness and its communicability by descent: if it still retains a certain morbid influence

on generation, this influence is manifested in the production of diseases, which are foreign to syphilis: for example, to scrofulous affections.

In a patient who has caught the primary disease, and in whom its characters have not been modified by any treatment whatever, the secondary phenomena usually show themselves in from four to eight weeks. They may indeed appear earlier or somewhat later; but the usual period of their manifestation is as we have now stated. On the other hand, the tertiary phenomena very rarely develope themselves before the sixth month, and in most cases not till after one or even two years, posterior to the original infection.

It has been alleged that the phenomena, which we group under the class of tertiary, sometimes appear without having been preceded by those of the secondary stage. Such an occurrence does not tally with the results of our own experience. The secondary symptoms indeed are sometimes not well marked, and continue but for a short time; or perhaps in such cases they may have been arrested by a judicious regimen.

Let it not be supposed that there is any stated time that the primary, secondary, and tertiary phenomena of the syphilitic disease can be said to continue; for it is well known that the primary may last for even a twelve-month, and the secondary, under various modifications, for two or three years or even longer. All that we wish to inculcate is, that they invariably follow or succeed to each other in the manner that we have stated:—viz. that the primary symptoms invariably precede the secondary, and that the secondary invariably precede the tertiary. They are never observed to appear in an inverse series.

Now as to the seat of, or the tissues affected by, the syphilitic disease in its different stages: The *primary* disease attacks the skin, the mucous textures, the lymphatic vessels proceeding from these different tissues, and lastly the superficial absorbent glands.

The phenomena of the *secondary* stage are observed in the skin and in the mucous tissues both internal and external: of the former, the mucous lining of the throat and that of the extremity of the rectum are most frequently affected. In addition to these, the lymphatic system, the testicles, the iris, the hair and the nails, often suffer from secondary syphilitic disease. When these last-named parts become involved, the disease indeed is verging to the limits of the *tertiary* stage or phasis, during which the deep-seated parts, such as the sub-cutaneous and sub-mucous textures, the bones, ligaments, &c. are chiefly affected.

A fact worthy of notice is that, in the same manner as the primary phenomena may remain altogether local, so the secondary and the tertiary phenomena sometimes cease by becoming local also, and continue in this state, long after the system has become quite freed from the cause which gave rise to them. Of this nature are certain *inodular* indurations remaining in the seat of primary chancres; such also are a great number of excrescences or vegetations about the labia and penis, and various affections of the periosteum and even of the bones.

We shall now proceed to point out the practical value of the three-fold division of syphilitic phenomena which we have laid down, and endeavour to shew how attention to it will greatly influence the success of our treatment.

In the *primary* phenomena, which exhibit no indication of constitutional poisoning by any hardening of the tissues where the ulcers are seated, the employment of mercurial remedies is oftener pernicious than useful. As soon however as any induration around the primary sore takes place—an incontestible proof that absorption either has, or is about to take place—mercury, if it be not absolutely a specific, is at least the most efficacious of all remedies against the disease. It is equally useful in the greater number of cases of *secondary* syphilis, unless indeed the disease be complicated with certain morbid states of the system which contra-indicate its employment.

But very different are its effects in cases of genuine *tertiary* syphilitic disease.

For then it is usually not only an efficacious remedy, but it is often such a pernicious poison that we cannot wonder that so many writers have not hesitated to ascribe to its use all the worst and most protracted features of constitutional syphilis.

Let it however be well remembered that if the tertiary symptoms are accompanied (as is not unfrequently the case) with any secondary symptoms, then indeed a cautious use of mercury will generally facilitate and expedite the cure. It is only when they (the tertiary) exist alone, that I condemn all preparations of this metal as useless, if not pernicious. The remedy, which I have found of the highest value in such cases, is the hydriodate of potass—a medicine which has been much vaunted, especially in England, as an anti-syphilitic remedy, but which has hitherto been far too indiscriminately used. The formula which M. Ricord recommends is a solution of ten grains of the salt in three ounces of water, and one ounce of syrup of poppies—a third part to be taken thrice daily in a decoction of sarsaparilla, hops, or saponaria. The dose should be increased by ten grains or so every five days, so that at length 100 grains are taken in the course of the twenty hours. Its use should be persevered in for a considerable time—say from six weeks to three months.

In some patients the hydriodate causes distress and even acute pain in the stomach; occasionally too vomiting, thirst, and diarrhœa. The appetite is usually increased: so likewise is the action of the kidneys, and hence occasionally a degree of diabetes is induced. The iodine may be discovered in the urine by the appropriate chemical tests. Some patients experience what has been called an *iodic intoxication*, characterised by an unsteadiness in the movements of the voluntary muscles, by slight startings and subsultus tendinum, by heaviness of the head, and a certain degree of confusion of the mental powers. Whenever such symptoms appear, the dose of the salt should be diminished, or its use suspended for a time.

The good effects of the hydriodate, when judiciously and discriminately administered, are usually obvious in the course of the third week or so: tubercles begin to shrink and be absorbed, ulcerations become cleaner and healthier, suppuration diminishes, pains in the bones are less severe, and swellings of the periosteum become less and less. The employment of local means, various according to the circumstances of each case, is not to be neglected at the same time. The application of a wash or gargle, containing iodine in solution, to ulcerations will be found of great benefit.* For pains in the bones, a succession of blisters on the affected part will give most relief. The same remedy will often be found to assist very materially in the dispersion of indolent subcutaneous tumors. In some cases, it seems decidedly useful to dress the blistered surface with mercurial ointment. When tubercular and periostitic swellings are unusually obstinate, the application of the tincture of iodine, pure or diluted with only one or two parts of water, so as to act as a mild caustic, is often beneficial.

I have already said that, if any secondary symptoms co-exist with the tertiary, it will be necessary, or at least useful, to combine the use of some mercurial preparation with that of the hydriodate. According to my experience, no preparation is preferable to the proto-ioduret of mercury, in doses of from one to five grains in the twenty-four hours.

According to the nature of the symptoms which first disappear, so should the continuance or the suspension of the particular remedy be regulated; but, as a general remark it may be stated, that it is well to continue the treatment for two,

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* M. Ricord's usual formula is one drachm of Tincture of Iodine (Pharm. Paris) to eight ounces of distilled water. This wash, when used as a gargle, causes a slight degree of a burning sensation in the mouth: the dose of the tincture requires, in some cases, to be raised to four or even six drachms.

three, or four weeks after the apparent cure of the symptoms for which the remedy was given.

M. Ricord closes his observations by alluding to his extended field of experience at the Hôpital des Veneriens, where he has tested on a large scale the value of the practice which he has now recommended.—*Bulletin General de Therapeutique.*

RHEUMATISM OF THE UTERUS.

In the last Number but one of the Medico-Chirurgical Review we called the attention of our readers to what the German and French physicians have denominated by the term, Rheumatism of the uterus,—remarking at the time that, as this organ is truly of a muscular structure, it is highly probable that it may be the seat of rheumatic disease.

The following cases, extracted from Rodamel's *Traité du Rhumatisme Chemique*, exhibit the sort of cases to which allusion is made.

Case 1.—A woman, who had for several years been subject to rheumatic attacks, experienced an attack last January in consequence of exposure to cold and wet. The inferior extremities were the parts chiefly affected. Suddenly the pain quitted the right leg, where it had been for several days extremely severe, and fixed itself in the region of the uterus.

There it was very acute and lancinating; abating at one moment and soon returning with great severity. The hypogastrium was tender on pressure, and the uterus felt, on examination, heavier than usual. By the use of remedies calculated to dislodge the rheumatism and to soothe the local irritation, the symptoms were speedily relieved; but no sooner was this relief experienced than the pain returned with force in the left knee.

Case 2.—A lady, after her second confinement, became affected with chronic rheumatism in the right thigh. The pain moved about to different parts of the body, and among the rest to the uterine region, giving rise to a sense of constant weight and dull pain there. After some time it seized the stomach; then moved downwards to the left knee, and again returned to the uterus. The patient had become alarmed that a cancerous disease was beginning to establish itself; but her fears were quickly dissipated by being relieved from her suffering. For several years however she was subject to occasional returns of uterine distress, whenever there was a rheumatic diathesis, so to speak, present in her system.

Case 3.—A lady, 63 years of age, suffered in 1820 from flying rheumatism, which successively attacked the left hand, the legs, the right hand, and the legs again. During a subsequent year, the pain fixed itself in the loins, then between the shoulders; again in the loins, and at length in the region of the uterus, where it was of a sharp lancinating character. Every now and then the patient felt as if she had the forcing, bearing-down pains of labour. There was also some degree of tenesmus and of incontinence of urine. By employing means to recall the rheumatism to the lower extremities, all these unpleasant symptoms were speedily dissipated. This patient experienced subsequently several similar attacks.—*L'Experience.*

UTILITY OF CHLORURETTED INJECTIONS INTO LARGE ABSCESSES.

M. *Payan*, surgeon of the hospital at Aix, has reported several cases of the good effects of injecting the chloruret of soda—one part of Labarraque's liquid chloruret mixed with eighteen or twenty parts of tepid water—into the sacs of large abscesses, when their discharge has become acrid and unhealthy, and symptoms of constitutional irritation have come on. It is quite unnecessary to detail the particulars of these cases. Suffice it to say, that M. *Payan* is of opinion that the accession of hectic fever after the opening of large collections of purulent matter is attributable to the fermentation induced by the admission of atmospheric air, and to the consequent irritation of the lining membrane of the sac.

If this opinion be correct, the primary object is to prevent or to counteract the degeneration of the purulent matter; and according to our author's experience, no remedy is so effectual for this purpose as the chloruret of soda.—*Revue Medicale.*

POISONING FROM THE EXTRACT OF ACONITE.

The following observations merit the attention of every medical man in a practical point of view, as they shew the necessity of great caution in the administration of certain potent drugs, and more especially of artificial preparations of these, which may vary much in strength and activity. Here we have the account of the deaths of two persons, and of the serious illness of several others, in consequence of their having been taking an alcoholic extract of the Aconitum napellus, for the cure of rheumatic pains, of much stronger powers than that which had been previously administered, although the doses had not been increased in quantity.

Case 1.—A man, 45 years of age, had been afflicted with rheumatic pains for upwards of nine months, when he went on the 19th of December into the hospital at Bourdeaux. He was ordered to take two grains of the extract of aconite morning and evening; and under this treatment, the dose having been increased to ten grains daily, the patient nearly got quite rid of his sufferings. On the 12th of January, the patient took his accustomed quantity of the medicine, and within a quarter of an hour afterwards he experienced, as he had been accustomed to do, tremblings in the muscles of the thighs and arms; these, which were somewhat painful, instead of gradually ceasing in the course of a few minutes, became more and more violent, and were succeeded by genuine convulsive movements which lasted for a quarter of an hour or so. During these convulsions the patient lost all sense of conciousness; as they ceased, he answered questions distinctly, but his vision remained confused. He complained of a fixed burning headache, which he said felt as if a bar of hot iron was passed through his brain from one temple to another. He complained of extreme heat in his mouth and throat; and the stomach was so irritable that it almost immediately rejected any food or drink that was taken. The respiration was hurried and uneasy; the pulse slow, irregular, and weak, and the limbs were of an icy coldness. On applying the ear over the cardiac region, the movements and sounds of the heart were heard to be confused and disordered. The physician in attendance, justly regarding the alarming symptoms as all attributable to the narcotic effect of the poison on the nervous system, and more especially on the nerves of the respiratory and circulatory apparatus, as he had seen another patient under similar circumstances sink, on the preceding evening, under the gradual and progressive cessation of the breathing

and pulse, immediately administered to the patient a strong infusion of *huaco*—a plant which seems to have a special stimulating effect on the heart—along with repeated doses of ammonia, the application of heat to the extremities, frictions along the spine and over the stomach with tincture of cantharides, &c. By a continuence of these means, the unpleasant symptoms gradually ceased, and the patient recovered not only from the immediate effects of the poisoning, but also from his former rheumatic sufferings.

On the same day, other three patients, to whom the fresh-prepared extract had been given, were similarly affected as in the preceding case. One, who had taken four grains in the morning, died at the end of three hours.

The following is the report of the other case which proved fatal.

A middle-aged man had been under treatment for some time with the extract of aconite for old rheumatic pains and had derived decided benefit, when one morning, almost immediately after taking his dose, which was from some fresh-prepared quantity of the extract, he was suddenly seized with a sense of burning in the throat, repeated vomitings, great anxiety, icy coldness of the limbs and body, syncope and a sort of stoppage (arret) of the circulation: these symptoms proved fatal in the course of four hours. On dissection, the veins of the cerebral membranes were highly congested, and the substance of the brain, when divided, exhibited numerous points of dark-coloured blood. The lungs also were congested with black blood, and were much less crepitant under pressure than usual. The right cavities of the heart were filled with a thick blood, which had all the appearance of currant-jelly. The stomach was *zebré*, and exhibited on its surface numerous patches of a brown colour, especially towards its cardiac extremity. The liver and spleen were gorged with black blood.

Two other patients in the hospital were affected in a similar manner, but in a less severe degree, as the patient whose case we have briefly reported. By the use of strong coffee, and the application of outward warmth, the symptoms of poisoning gradually subsided and disappeared.

The facts now detailed sufficiently point out the necessity of the greatest caution in the administration of poisonous vegetable extracts from different parcels or quantities prepared at different times, and perhaps under different circumstances. The physician will act wisely to diminish the dose of such drugs, whenever a fresh parcel or quantity is used for the first time.—*Gazette Medicale.*

CLINICAL REVIEW.

Guy's Hospital Reports. No. IX. October, 1839. Edited by George Barlow, M. A. &c. &c. and James P. Babington, M. A. &c. &c.

The present Number is a worthy successor of those that have gone before—no mean praise, nor trifling recommendation. Sir Astley Cooper, as usual, is a contributor. The zealous Baronet is always on the alert to render his experience available to the purposes of science.

The contents of the Number are as follows :—

On the Dislocation of the Os Humeri upon the Dorsum Scapulæ, and upon Fractures near the Shoulder-Joint ; by Sir Astley Cooper, Bart., F.R.S. D.C.L. (With Plates).—Case of Poisoning by Sulphuric Acid ; by Alfred S. Taylor. On Amputation ; by Bransby B. Cooper, F.R.S.—Cases of Hernia ; by Bransby B. Cooper, F.R.S. (With Plates).—Cases of Empyema and Pneumo-Thorax ; with Observations ; by George H. Barlow, M.A. & L.M.—On the Physical Diagnosis of Incipient Phthisis : by H. M. Hughes, M.D.—Observations on the Pulse in Phthisis Pulmonalis ; by William Augustus Guy, M.B.—On the Supposed Existence of Fluoric Acid as an Ingredient in certain Animal Matters ; by G. O. Rees, M.D. F.G.S. &c.—Observations on the Incubated Egg ; by Joseph Towne. (With Plates).—Report of Primary Syphilitic Cases ; by Charles Aston Key.—On the Preservation of Subjects for Anatomical Purposes ; by B. G. Babington, M.D., and G. O. Rees, M.D.

It would be inexcusable did we not pay our first respects to Sir Astley.

1. On the Dislocation of the Os Humeri upon the Dorsum Scapulæ, and upon Fractures near the Shoulder Joint. By Sir Astley Cooper, Bart. F.R.S. &c. &c.

When Sir Astley published the last edition of his Work on Dislocations and Fractures, he had not enjoyed an opportunity of examining the appearances on dissection of a dislocation on the dorsum of the scapula. Such an opportunity has now occurred, and Sir A. contributes the particulars which he has learnt to the profession.

Case. " I was sent for by Mr Complin, a gentleman residing in Bishopsgate-street, in the City of London, to examine his left shoulder ; and I found a very obvious luxation of the os humeri upon the dorsum scapulæ, as was evinced by the depression below the acromion, by the absence of the head of the bone from its natural situation, by a depression by which the fingers could be admitted into the glenoid cavity between the head of the os humeri and the coracoid process, but more especially by the projection of the head of the os humeri upon the back part of the glenoid cavity of the scapula, and upon its inferior costa, as well as by its filling the space between that costa and the spine of the scapula.

I advised an extension : but he had already suffered so much from attempts at reduction, that he was full of apprehension at the least motion of his shoulder, so that I no longer urged it, and he retained the appearances of the displacement to his death. Dr. Cobb had seen him. Mr. Key had also examined his shoulder with care ; and his son, who is a surgeon in Charterhouse-square, has given me the particulars of the case, in a letter which I received from him :

' Mr. Complin was 52 years of age, and had been the subject of epileptic fits. One of these, which was particularly severe, occurred one morning whilst he was in bed, and in his violent convulsive strugglings his shoulder became dis-

located. Mrs. Complin, who was with him, is confident that he neither fell from his bed nor struck his shoulder, during the fit ; and that the appearances which I have described, and which remained until his death, were the result of muscular efforts alone, was the firm belief of Dr. Cobb, Mr. Key, and myself. Besides the unusual mode in which the accident happened, there were two other circumstances peculiar in the case. The one was, that the head of the bone could be, by extension, drawn into its natural situation in the glenoid cavity ; but so soon as the force ceased to be applied, the head of the bone slipped again upon the dorsum scapulæ, and all the appearances of dislocation were renewed. The second peculiarity consists in a sensation of crepitus as the bone escaped from its socket, so as to lead to a belief that the edge of the glenoid cavity had been broken off ; and this symptom led to a belief that the bone so readily slipping from its situation, when restored to its natural cavity, arose from the imperfection of the articular surface of the glenoid cavity."

The patient was unable to use, or even to move the arm to any extent ; nor could he, by his own efforts, elevate it from his side ; and although he lived seven years after the occurrence of the epileptic fit, he never recovered the use of the limb."

After his death, the scapula and os humeri were sent to Sir Astley, who found the state of the muscles and the situation of the bones to be the following :—

The head of the os humeri was placed behindthe glenoid cavity of the scapula ; and it rested upon the posterior edge of that articulatory surface, and upon the inferior costa of the scapula, where it joins the articulation. When the scapula was viewed anteriorily, the head of the os humeri was placed in a line behind the acromion, but below it ; and a wide space intervened between the dislocated head of the bone and the coracoid process, in which the fingers sunk deeply towards the glenoid cavity of the scapula.

When viewed posteriorly, the head of the os humeri was found to occupy the space between the inferior costa and spine of the scapula, which is usually covered by the infra-spinatus and teres-minor muscles. The tendon of the subscapularis muscles and the interior portion of the capsular ligament had been torn at the insertion of that muscle ; but the greater part of the posterior portion of the capsular ligament remained, and had been thrust back with the head of the bone, the back part of which it enveloped.

The supra-spinatus muscle was put upon the stretch ; the subscapularis diminished by want of action ; and the infra-spinatus and teres-minor muscles were shortened and relaxed, as the head of the bone carried their insertions backwards. The tendon of the long head of the biceps muscle was carried back with the head of the bone, and elongated ; but it was not torn.

As to the changes in the bones, the head of the os humeri and the outer edge of the glenoid cavity of the scapula were in direct contact, the one bone rubbing upon the other when the head of the os humeri was moved ; and this accounted for the sensation of crepitus at the early period of the dislocation, as there was no fracture. The glenoid cavity was slightly absorbed at its posterior edge, so as to form a cup, in which the head of the bone was received ; and this latter bone, and the articular cartilage, had been in some degree absorbed when it was in direct contact with the scapula, as well as changed by attrition during the seven years the patient lived.

The surface of the original glenoid cavity, instead of being smooth and cartilaginous, was rough and irregular, having elevations at some parts, and depressions at others. The extremity of the acromion was sawn off, to look for any little fragment of bone which might have been broken off ; but not the smallest fracture could be perceived.

" The dissection," continues Sir Astley, " of this dislocation explained well the whole of the circumstances.

In the usual dislocation backwards, or on the dorsum scapulæ, the bone, when

reduced to its proper situation, remains there; and only requires a roller, and rest for a few hours, to prevent the future escape of the bone from the glenoid cavity; and the muscles, recovering their tone, fix it in its natural cavity. But in this case, as the tendon of the subscapularis and the capsular ligament had been torn from the smaller tubercle of the head of the os humeri, and the bone was consequently drawn back by the action of the infra-spinatus and teres-minor muscles, there was no support given to the head of the bone, when returned into its cavity; but so soon as it was replaced, it was drawn back by the action of the two posterior muscles, and all the appearances of dislocation reproduced.

The bandage required to keep the bone in its place should be placed on the fore-part of the chest, and behind the shoulders, to keep the head of the bone forwards; and a pad ought to be placed behind the head of the bone, to prevent it from slipping from its cavity: so that the bandage would be the reverse of the common stellate, which crosses upon the back; but this should be made to cross upon the anterior part of the chest: and to this bandage a sling must be added, to support the elbow, and to keep it back."

Sir Astley goes on to state, that, since he last wrote on dislocations of the shoulder, several cases of dislocation on the dorsum scapulæ have come to his knowledge. The accident usually happens by a violent push of some opposing body whilst the arm is advanced, and the head of the bone is thrown much further backward than in Mr. Complin's case; and probably the posterior portion of the capsular ligament is torn.

"In these cases, I have seen the common means of reduction employed, viz. fixing the scapula by a band, and drawing the arm outwards from the body; but the reduction was slowly performed, and was with difficulty effected. I was therefore pleased with the following case: in which the reduction was easily effected, after twenty-three days, without any forcible or complicated plan.

A gentleman who was staying in Essex got into a scuffle with a man; and pushing him violently from him, he dislocated the os humeri backwards. He consulted a surgeon in the place in which he was staying at the time of the accident; who advised his going to London, to consult an hospital surgeon. He followed this advice on the seventeenth day after the accident; and the surgeon, to whom he applied, tried to restore the bone to its place, but it resisted all his efforts. On the twenty-third day he applied to me; and the nature of the accident was sufficiently obvious, as the projection of the head of the bone could be readily felt; and when the elbow was rotated, the head of the os humeri could be perceived rolling upon the dorsum scapulæ. As he called upon me at my own house, I had no means of making the usual extension at the moment; but I placed the patient upon a chair; and bending his elbow at right angles, I raised his arm, and carried it behind his neck, so as to bring the hand across the back of the neck to the opposite shoulder; then forcing the elbow back, and pressing upon the head of the bone, I pushed it under the inferior costa of the scapula, and it instantly returned into the glenoid cavity. Mr. Bransby Cooper was present at the reduction of the dislocation.—Other means, however, will succeed."

A man came to the surgery of Guy's Hospital: and Mr. Tallent, dresser of Mr. Bransby Cooper, placed the patient upon a chair, put his knee in the axilla, whilst his fellow-students extended the arm from the wrist under his thigh, and the bone was reduced.—Mr. Dunn, surgeon in Blackfriars, also succeeded easily, by fixing the scapula, and extending from the wrist, in the usual manner of reducing a dislocation in the axilla.

In a case attended by Messrs. Whittaker and Key.

Case. A stout man fell down on his shoulder, and dislocated the head of the humerus on the dorsum scapulæ, where the head of the bone could be seen and felt. The elbow could be brought to the side, or raised on a level with the

acromion. Rotation outwards was entirely impeded, in consequence of the subscapularis being stretched, all motion of the limb giving him extreme pain; which was referred to the lower part of the deltoid muscle, in the direction of the articular nerves, which were probably injured by the pressure of the head of the bone.

"At first, we placed our patient on a chair; and while Mr. Whittaker fixed the scapula, I carried the elbow upwards and backwards, in order to throw the head of the bone forwards into the glenoid cavity, but to no purpose. All that we gained by this measure was a slight advance of the bone, and reducing him to a state of syncope. In this state, we laid him upon his back; and fixing his scapula by the heel in the axilla, drew the arm downwards; and by extension, continued for a minute or two, succeeded in reducing it."

II. OF FRACTURES OF THE HEAD AND NECK OF THE OS HUMERI.

Sir Astley has arranged and communicates the results of his experience on these troublesome and frequently perplexing accidents. He has found them of various kinds:—

First—Dislocations of the os humeri into the axilla, with fracture, and detachment of the head of the bone, which is thrown on the inner side of the inferior costa of the scapula.

Secondly—Fractures through the neck of the bone, at the tubercles; in which the head of the humerus is broken off, but it remains in the glenoid cavity. This fracture occurs at the epiphysis, or anatomical neck of the bone.

Thirdly—A fracture below the articulation, between it and the insertions of the pectoralis-major, latissimus-dorsi, teres-major, coraco-brachialis, and deltoid muscles. This part has been called the surgical neck of the bone.

1. *Of Dislocation and Fracture.*

A person, says Sir Astley, falls, pitches with violence upon his shoulder, or a heavy-laden carriage passes over it: by the first impression of the accident, the os humeri is dislocated; and by a second, the neck of the bone is broken, and the head is detached, and lodges in the axilla.

The signs of this accident are, the usual symptoms of dislocation of the os humeri into the axilla, the head of the bone being there felt; but with somewhat less hollow below the acromion, and behind the deltoid muscle, because the broken extremity of the shaft of the bone quits the fractured head, and becomes situated in the glenoid cavity of the scapula. Upon rolling the arm, the broken shaft of the bone can be perceived to move under the acromion. There is little power of motion; and considerable pain, not only in the shoulder, but in the arm and hand.

The head of the os humeri can be felt in the axilla, when the arm is raised and the surgeon's fingers are thrust into the axilla: but when the arm is rolled at the elbow, the head of the bone remains entirely unmoved, or very little obedient to the motion of the elbow.

There is, in some cases, but not always, a distinct crepitus; but more frequently a gristly feeling, from friction of the broken neck of the bone against the glenoid cavity and its cartilaginous covering.

The broken end of the os humeri is drawn somewhat forwards; but is easily pushed into the glenoid cavity; from which, unless it be supported, it is again drawn by the pectoralis and coraco-brachialis muscles.

The arm, measured from the acromion to the elbow, is shorter than the other.

As great violence has occasioned this accident, the parts are much obscured, by the effusion of blood, and by the inflammation which speedily follows: but,

for the first three hours, the muscles are so lax, that, but for the pain it occasions, considerable motion of the limb may be produced.

Sir Astley believes that he has seen many of these cases. He has had an opportunity of dissecting three.

In the *first*, (the patient died some time after the accident) the deltoid, teres-major, and coraco brachialis did not appear altered. The supra-spinatus was somewhat wasted, as was the teres-minor; and their colour was fainter than natural. The infra-spinatus was put upon the stretch. The subscapularis passed over the head of the bone, and adhered to its cartilaginous surface.

The capsular ligament had been torn, under the subscapularis tendon; but every other part was entire.

The head of the os humeri had been broken off; and was found in the axilla, behind the coracoid process of the scapula, and it was strongly united to the inner side of the scapula.

The fractured neck of the shaft of the os humeri was seated in the glenoid cavity of the scapula, widely separated from the head of the bone; and the broken os humeri formed a new and good articulation with the glenoid cavity, with a capsular ligament over it, which was in part newly formed. A ligamentous matter passed from the broken end of the os humeri to the inner surface of the glenoid cavity of the scapula.

The edge of the glenoid cavity remained; but its surface was rather ligamentous, than smooth and cartilaginous.

The greater tubercle of the os humeri had become enlarged; the tendon of the biceps remained in the bicipital groove; and the tubercles were connected with the broken extremity of the shaft of the os humeri, and not with its head.

In the *second*, (the accident had also happened long previously), the head of the os humeri was dislocated into the axilla, and broken from the shaft; and it remained upon the inner side of the inferior costa of the scapula, to which it was firmly united.

The tubercles of the neck of the os humeri were broken off with the head of the bone; and the fractured extremity of the neck of the os humeri was placed in the glenoid cavity of the scapula.

The underhand motions of the shoulder were restored: but the elevation of the bone, beyond a right angle, was strongly resisted, and even with difficulty could be accomplished in the dead body.

In the *third* case, the head of the os humeri was broken off; and it rests in the axilla, upon the subscapularis muscle, and on the inner side of the inferior costa of the scapula.

The infra-spinatus and teres-minor muscles were much wasted, on account of the arm having its motions in a great degree destroyed.

The supra-spinatus and subscapularis muscles were less diminished; as what motion remained was performed principally by them.

The tendon of the biceps flexor cubiti had been torn, but its remains adhered to the bicipital groove.

The broken upper extremity of the os humeri was lodged in the glenoid cavity of the scapula, and had formed there a ligamentous joint.

The head of the humerus had a new capsular ligament, to which the axillary artery adhered.

The head of the bone was not joined to the scapula, as in the two former instances; but it was united, by a small process of bone, to the os humeri, at the part at which it had been broken off.

The head of the bone was placed on the sternal side of, and a little below the level of, the coracoid process of the scapula.

In enumerating the diagnostic signs which distinguish this from simple dislocation into the axilla, Sir Astley would observe that the fall and depression

of the shoulder is less striking than in that accident, the shaft of the bone filling up the glenoid cavity.

That still the head of the os humeri can be distinctly felt in the axilla; and, that as it does not roll when the os humeri is rotated from the elbow, this becomes the principal diagnostic mark.

That a grating sensation can generally be felt, and sometimes a very distinct crepitus, especially if the elbow be raised outwards during the rotation of the arm.

That the upper broken extremity of the os humeri can be felt advancing to the coracoid process; but that it is easily returned into the glenoid cavity, and that it there rotates with the arm, but easily again slips forward.

That the accident which produces it is more violent than that by which simple dislocation in the axilla is produced; and there is, therefore, a greater appearance of contusion, more swelling, and more pain.

Speaking of the treatment, Sir Astley says:—extension is of no further use, than to bring the broken shaft of the os humeri into the glenoid cavity, where it forms an useful articulation; but no extension, however violent, disturbs the broken head of the bone, for no proper force could bring it into the glenoid cavity of the scapula. If reduction be ever effected, it will probably be by an extension with the heel or knee in the axilla.

To keep the broken end of the shaft of the bone in the glenoid cavity, a pad must be put in the axilla, to thrust it outwards; a clavicular bandage must be used, and the arm be supported in a sling.

But let the surgeon do what he will, the head of the bone will probably remain in the axilla, and the upper motions of the arm will be in a considerable degree lost.

And with that frankness which has ever distinguished him, Sir Astley adds:—"These cases should teach the members of our profession to be kind, generous, and liberal towards each other; and not to impute to ignorance or inattention that which is the result of a generally incurable accident. It too often happens, that when every trial has been made to restore the parts, and without success, the patient goes to some other surgeon, to whom he shews his arm, and points out its uselessness and want of motion. A jealous and illiberal medical man might say, 'Yes, this is a dislocation which has not been reduced: I wish I had seen it at first; but now it is too late for a successful attempt to replace it.' However, every intelligent well-informed surgeon will *now* confess, that no knowledge, or exertion of skill, could have prevented the deformity and loss of the natural motion which results from this formidable accident."

2. *Of Fracture through the Tubercles.*

This fracture, Sir Astley tells us, happens at the junction of the head of the os humeri with the tubercles, at the part at which the capsular ligament is fixed, and where, in young people, the epiphysis is placed.

It is a very frequent occurrence in young people; it sometimes, though more rarely, happens in the old; in middle age it seldom occurs.

In children, it is the result of falls upon the shoulder; or it happens from a sudden or unexpected push of the arm, which it is unprepared to resist.

Sir Astley has seen it complicated with fracture of the clavicle. He gives as signs of the accident:—

The head of the bone remains in the glenoid cavity of the scapula; so that the shoulder is not sunken, as in dislocation.

When the shoulder is examined, a projection of bone is perceived upon the point of the coracoid process; and when the elbow is raised and brought forwards, this projection is rendered particularly conspicuous.

By drawing down the arm, the projection is removed; but it immediately

re-appears upon giving up the extension, and the natural contour of the shoulder is lost.

The motion of the shoulder is painful; and the child cannot raise the arm but with his other hand: the elbow is with difficulty removed from the side; and the arm is obliged to be supported, either by the patient himself, or by aid of another.

Sir Astley has known the accident mistaken for dislocation. The point of the broken bone is felt at the coracoid process, and this is supposed to be the head of the os humeri; but, with care, the head of the bone can be felt still filling the glenoid cavity. When the elbow is rolled, the head of the bone does not obey its motion.

A slight extension draws the broken point of the bone into the natural position, beneath the head, from which it has been separated; but it always immediately re-appears, when the extension is lessened or removed.

Upon the dissection of these cases in the young, the head of the os humeri is found broken off at the tubercles, but it remains in the glenoid cavity.

A great quantity of ossific matter is thrown out from the periosteum and fractured neck of the shaft of the bone, but very little from the broken head. A cup of bone is formed upon the fractured neck of the shaft, in one of Sir Astley's preparations, which supports the head of the bone, so as to prevent the neck separating from it. A slight union is produced by the cancellated structure; the principal callus being formed on the outer surface, and it encases the bone.

Sir A. Cooper relates a case which occurred in the practice of a very able surgeon, Mr. Webster, of the Edgeware Road. The patient was 77 years of age, a period of life at which such an accident is necessarily rare.

The best mode, says Sir Astley, of treating these accidents consists, in the young, in applying a splint on the fore and back part of the arm, binding it on by a roller; placing a pad in the axilla, and using a clavicular bandage; supporting the hand, but not the elbow, in a sling; as, if the elbow be raised, the broken end of the bone projects forwards.

In old persons, the injury is more severe, and the force producing it is violent: it therefore becomes necessary to reduce inflammation, and to apply leeches and evaporating lotions; to observe perfect rest at first: and, after some time, the same treatment, as to bandages, may be pursued as in the young.

In both the old and the young, passive motion is to be employed so soon as the union is effected: which, in youth, is in a month; but it requires from two months to twenty weeks, in age.

3. *Of Fracture of the Humerus at its Surgical Neck.*

The bone is broken between the tubercles and the insertion of the pectoralis-major, coraco-brachialis, latissimus-dorsi, teres-major, and the deltoid muscles.

In this case there is great deformity of the bone; the head, neck, and tubercles remain in the glenoid cavity, with part of the shaft of the bone connected with them; but the broken end of the shaft is drawn forward and upward, under the pectoralis-major muscle.

When the elbow is thrust upwards, the broken extremity of the bone projects on the inner side of the coracoid process of the scapula; and it sinks when the support of the elbow is removed.

When the arm is rotated at the elbow, the broken end of the lower part of the bone is felt to roll.

There is no marked depression under the acromion; or but very little, if any; and then it happens from the deltoid muscle being dragged down.

The motion of the shoulder is extremely painful; and the patient has generally one or more fingers affected, sometimes contracted, at others painful only; and this depends upon one or other of the nerves of the axillary plexus being irritated by a part of the bone.

The elbow admits of being moved in all directions; for there is much less confinement of the arm at the shoulder than in the other accidents of that part; however, the movements are very painful.

The diagnostic signs of this accident are found in the head of the bone being in its cavity; in its being unaffected by the rotation of the elbow; in the point of the fractured neck being felt under the pectoral muscle; and in the surgeon being able to move the arm much more freely than in the other fractures of the neck of the bone.

Such is Sir Astley's account of this variety of accident. He relates a case which occurred to Mr. Blenkarn of Bermondsey, and which seems to have been managed with equal skill and success.

In the treatment, adds Sir Astley, the splints, the clavicular bandage, and the pad in the axilla, are required, but, above all, it is necessary to permit the arm to hang by the side, unsupported at the elbow; so as to let the weight of the arm be a constant source of extension upon the broken end of the bone. He subjoins:

"Mr. Tyrrell informs me, that in a case of fracture at the tubercles, he found that the bone best maintained its natural position by its being raised and supported at a right angle with the side, by a rectangular splint, a part of which rested against the side, whilst the arm reposed upon the other part; and until he made use of this plan, he could not succeed in removing the deformity, or in keeping the bone in its place.

Mr. Guthrie has given an interesting account of a curious case of fracture of the neck of the bone, in the Medico-Chirurgical Review, Vol. VIII. p. 289:—

A man fell from a ladder, and received a severe injury on his shoulder. Mr. Guthrie saw him about three hours after the accident; and the most remarkable and striking appearance was a fold or pucker of the skin, the size of half-a-crown, situated over the pectoral muscle. A hard substance could be felt below; and extending, above it, to the coracoid process. He says, 'I decided that it was a fracture, not a dislocation. The arm was moveable in every direction; and the elbow could be brought close to the side.' After the swelling had subsided, he says, 'I decided that the bone had been broken at its anatomical neck, and forced through the pectoral muscle.'

He found that he could bring the bone down to its natural situation, as to length; but it would not exactly remain in its proper place.

The man recovered, with a good use of his arm; so that the case terminated very favourably."

This paper of the worthy Baronet's deserves the attention of our readers.

III. On the Preservation of Subjects for Anatomical Purposes. By B. G. Babington, M.D. and G. O. Rees, M.D.

It is but too notorious, that the Anatomical Bill has worked and been worked badly, and is, every year, working and being worked worse. If we go on, in an arithmetical ratio, as we have begun, the inspector will soon have his salary for nothing, for there are no dissections to inspect, and anatomical lectures will be limited to the description of the vital *principle*, in the absence of anything more tangible. Impressed with a laudable desire to make the most of the few bodies that the zeal and the exertions of the inspector can procure, Drs. Babington and Rees have tried many experiments on the best method of preventing putrefaction. We need say nothing of the methods that failed. But they bethought themselves at last of creasote and pyroxylic spirit. They first injected rabbits, with excellent success. Creasote was dear—pyroxylic spirit cheaper, and the pickling of the rabbits having answered so well, they de-

termined to try what could be done with a human subject. We quote what follows :—

"On the 15th of May last, a convict at Woolwich, 23 years of age, died of inflammation of the bowels ; and, on the 18th, his body was sent, by order of the Inspector of Anatomy, to Guy's Hospital, for dissection. It was neither œdematous, nor in a state of decomposition ; and although the integument was somewhat fat, it was, upon the whole, in a fair condition for anatomical purposes. On the 21st, a gallon of pyroxylic spirit was injected into the aorta ; and the body was placed in a water-tight shell, or trough, made of slate, and loosely covered with a wooden lid. This trough was deposited in a cellar, the stone floor of which was about two feet below the surface of the ground. On the 29th, the lid was removed, for the first time, and the body was found to be perfectly fresh. On this occasion, the flesh of the extremities was remarked to have become somewhat firmer than when the injection was first made. From the 29th of May to the 12th of June, the subject was examined, by removing the lid of the trough every two or three days; and no change was perceptible until the latter date. At that time, the only sign of alteration was the appearance of two or three brown streaks—evidently veins—on the inside of the thighs ; and a separation of the cuticle of the hands from the true skin, which began to assume a greenish hue. Every other part of the body was perfectly preserved, and of natural colour. There was no putrid odour on opening the lid of the trough, but the characteristic smell of the pyroxylic spirit was in some measure passing off. An incision into the middle of the right thigh, such as would be made in operating for popliteal aneurism shewed that the fat, muscles, blood-vessels and nerves were in a complete state of preservation. It should be observed, that ever since the injection of the subject the weather had been that of established summer; and that a second body, received from Woolwich, was so decomposed in three days after its arrival as to be totally unfit for dissection. On the last examination, as well as on two or three previous occasions, fluid was observed to occupy the bottom of the trough, and this it was thought adviseable to remove ; it was likewise determined to throw another quart of pyroxylic spirit in the aorta.

On the 24th of June, the body was removed to the dissecting-room, and placed on the table, for the purpose of being thoroughly dissected. With the exception of a greenish appearance on the outer part of the left thigh, and the brown streaks already mentioned, it appeared, when brought into the light, perfectly preserved. The skin on the back of the hands, instead of putrifying, had dried, and become transparent ; while the greenness of the left thigh proved on incision, to be quite superficial. The dissection was undertaken by eight gentlemen, and completed by the 13th of July ; and it is testified by them all, that every anatomical purpose was as fully answered as if the subject had been quite recent. The various parts, on being laid open, were of natural colour and of firm texture. The tendons and ligaments were silvery and white, and the nerves had lost none of their tenacity. The pectoral muscles alone formed an exception to the natural colour which was elsewhere maintained : this appeared to be attributable to the macerating effects of a wetted cloth that had been laid upon the breast, to prevent evaporation through the aperture by which the injection had been accomplished. The parts which were exposed by dissection gradually dried; changing, in the course of a day or two, to a dark colour, and instead of putrifying, becoming hard. The brain, although it had retained its form, was soft, semi-putrid and unfit for demonstration : it must be borne in mind, however, that had the head been opened six days after death—at which period the subject was injected—this probably would have been the case. With the above exception, the viscera were all perfectly preserved ; in proof of which, one of the kidneys, appearing, in colour and consistence, quite recent, was removed in the begining of July, and, after maceration in warm water, in the

usual manner was injected with wax. This experiment was made in order to ascertain whether the spirit produced thickening, or any other alteration, in the inner coat of the blood-vessels; which was found not to be the case, as the wax had fully penetrated the tissues of the organ.

Of the gentlemen engaged in the dissection of this subject, one complained that he at first suffered headache from the odour which it exhaled; and some, who were not so engaged, considered this to be more disagreeable than that of putridity. The same opinion is sometimes expressed with respect to the odour of parts that have been macerated in spirit of wine. Some allowance in favour of the pyroxylic spirit should be made on the score of novelty; and since its vapour is not poisonous nor injurious, any more than that of spirit of wine, it is to be presumed that the student would soon become accustomed and reconciled to it. In a first trial, upon the human subject, of the antiseptic powers of this fluid, a natural desire existed, on our parts, of watching its progress, and of noting such changes as might gradually occur. This led to the necessity of opening frequently the lid of the trough; and it has already been remarked, that this by no means accurately fitted the trough itself. The pyroxylic spirit being of a very volatile nature, it is obvious that its preservative qualities were much diminished by this proceeding. It is, therefore, not to much to expect that in an air-tight vessel a subject thus prepared would not exhibit even those superficial changes which took place in this instance, and would be preserved for an indefinite period.

The advantages of employing pyroxylic spirit are, 1st, its extreme fluidity, in consequence of which it may be thrown into the minutest vessels. 2dly, its freedom from colour. 3dly, its cheapness; for a gallon is sufficient to inject a full-sized subject: and even with the present limited manufacture of it, it is only half the price of alcohol; while it possesses infinitely greater antiseptic powers, and is, in common with that fluid, miscible with water, in all proportions. 4thly, its innocuous nature, and its freedom from any corrosive action upon steel instruments. We are not aware that there is any material disadvantage in its employment: the odour, it must be admitted, is more or less disagreeable to different individuals, but not so much so, to the generality of persons, as that of the putridity which it serves to prevent. Of this fluid, which must not be confounded with pyro-ligneous acid, or with pyro acetic spirit, a full account may be found in the 'Annals of Philosophy,' N.S. viii. 69. That which we employed was procured from Morson's, in Southampton Row; and it may be had from any operative chemist."

The plan must be tried extensively, and we hope that it will succeed so well as this account might lead us to anticipate. Much credit is due to the experimenters.

IV. Appearances after Death in a Case of Poisoning by Sulphuric Acid.

These are detailed by Mr. Alfred Taylor. The patient was 40 years of age —took about a wine-glassful of sulphuric acid—and died twenty-five hours afterwards.

Dissection.—This took place three days after death. The body was stout, and well-formed; free from marks of lividity or ecchymosis. Decomposition had already commenced about the head and abdomen. There were no traces of the action of the acid on the exterior of the face and neck. The membrane covering the tongue and palate was white, soft, and thickened: on removing this, the parts beneath were intensely reddened. The membrane lining the pharynx and œsophagus was corroded throughout its length. It was of an ash-grey colour, disposed to longitudinal rugæ, between which a brownish-coloured liquid was

interposed. The membrane was not particularly softened: it resisted the pressure of the finger. The epiglottis, and the parts about the glottis, had become affected by the acid; but the larynx itself had escaped.

On opening the abdomen, the stomach was seen lying collapsed; externally, towards the cardia, it was a deep-red colour, intermixed with black striæ. There was no perforation of its coats, which were pretty firm. The small intestines, especially the duodenum, and upper part of the jejunum were inflamed. On laying open the stomach, it was found to contain no liquid, but a brownish-black pasty matter. This was washed off, and reserved for analysis. The mucous membrane was universally blackened; and raised into thick prominent cords or bands, which were disposed parallel to the greater curvature between the cardia and pylorus. Towards the pyloric extremity, the black discoloration, and, with it, the rugose condition of the mucous membrane, ceased. The coats of the organ were not perceptibly softened; and even the blackened parts resisted the pressure of the finger, having a hard corrugated feel. On stretching the stomach slightly, the black rugæ were found to be bordered, at the margin, with a deep crimson-red colour, from the inflamed mucous membrane beneath. This black discoloration was probably due, partly to the carbonizing action of the acid, and partly to its effect on the blood contained in the vessels of the mucous membrane.

The mucous membrane of the small intestines was inflamed, and the duodenum presented the same black discoloration as the stomach. The liver was of a deep livid colour, and congested. The lungs were of a dark grey, but not particularly full of blood. The heart and large vessels connected with it, were much distended with blood, mostly in a coagulated state. The lining membrane of the descending aorta was of a bright scarlet colour. The other organs presented no appearance requiring notice.

The contents of the stomach, with the organ itself, were digested in water; and a deep brownish-coloured liquid was obtained. When the insoluble matters had subsided, this liquid was filtered and tested. It was faintly acid. It gave a precipitate with nitric acid, probably albumen; but there was not the slightest indication of sulphuric acid, either free or combined, on applying the usual reagents. The poison had therefore become effectually removed by vomiting and purging; aided, perhaps, by the action of the magnesia, which had been freely exhibited.

V. Dr. Rees on the Absence of Fluoride of Calcium, as an ingredient in Animal Structures.

After noticing the positive announcement of Berzelius, that fluoric acid may be detected in human teeth, bones, and urine, Dr. Rees remarks:—

"The experiment which the Baron recommends, in order to obtain corrosion from bone-earth, is, to distil equal parts of strong sulphuric acid, and water upon it, until the measure of water is brought over. He states, that the distilled liquor, if evaporated in the glass receiver, will produce a corrosion.—I repeated this experiment, using 100 grains of bone-ash, and an ounce of the acid mixture; but could obtain no action on the receiver, by evaporating the distilled liquor; nor was there any corrosion or opacity produced on any part of the apparatus.

During the evaporation of the last portions of the liquor, dense white fumes appeared; and there was some difficulty in vapourizing the whole of it. On neutralizing a portion with ammonia, and testing it with nitrate of silver, a yellow precipitate of phosphate of silver was thrown down. A further examination shewed the presence of sulphuric acid, and traces of hydrochloric acid. I was much surprised to find phosphoric acid in this result of aqueous distilla-

tion, as the heat had not been urged during the process; for I had considered that acid as of too fixed a nature to volatilize with water at so low a temperature. It appeared to me now, that the presence of phosphoric acid, in this distilled liquor, might be a source of fallacy in the above experiment for establishing the presence of fluoric acid as a constituent of human bone; for it is a well-known fact, that phosphoric acid, if heated on glass of an inferior quality till it volatilize, will act upon it with considerable energy; and all the animal substances in which fluorine has been said to exist, are particularly rich in phosphoric acid;—thus the ashes of ivory, of human bone, and the enamel of teeth, as also the precipitate obtained from urine by means of lime-water, are all of them composed, in very great part, of phosphate of lime. Mr. Richard Phillips has mentioned (in the Annals of Philosophy, Vol. V.), that when the water contained in uranite is driven off from the powdered mineral, a portion of the phosphoric acid is volatilized with it; the heat used being that of a common spirit lamp. This is the only fact with which I am acquainted (with the exception of my own observation), to shew that phosphoric acid will volatilize with water. The heat used in Mr. Phillips's experiment was, most probably, considerably higher than that which I applied. There seems no doubt that phosphoric acid is much more volatile than has heretofore been supposed.

Having failed in detecting fluoric acid in human bones, I determined on testing for its presence in the enamel of teeth, in recent ivory, and in the precipitate obtained from urine by the addition of lime-water. Two different specimens of ivory (tusks of the elephant) gave no evidence of the presence of fluoric acid, when carefully tested, either before or after calcination; and I was equally unsuccessful with the enamel of human teeth, and the precipitate from the urine.

In these experiments, when I had failed in acting on the glass, I always found that the addition of 0.3 grains of fluoride of calcium to the experiment produced a strong and indelible mark on the surface of the glass test-plate. I mention 0.3 grains, because it will always be found sufficient to produce a most unequivocal corrosion: though I obtained satisfactory results by the addition of a much less quantity.—I have had only one opportunity of examining fossil ivory; and in that instance, I could not ascertain its locality: on submitting it, however, to the test used for recent ivory, bone, &c., I obtained immediate action on the glass.

In conclusion, I must express my firm conviction, that fluoride of calcium, as an ingredient in fossil ivory, must be regarded as an extraneous matter introduced by the partial mineralization of the animal substance;—that no such constituent exists in recent ivory, the enamel of teeth, human bone, or urine;—in fact, that fluoride of calcium should be expunged from the list of the constituents of animal substances."

VI. On the Physical Diagnosis of Incipient Phthisis. By H. M. Hughes, M.D.

Dr. Hughes admits the difficulty and insists on the advantage of physical diagnosis, or of correct diagnosis assisted by physical investigations, in the early stage of phthisis. He attempts to contribute to our means of attaining the precision we so much desire.

The local signs, he says, of tubercular irritation may, like those of advanced phthisis, be obtained by three modes of investigation—inspection, auscultation, and percussion. And he observes that it may be premised, that none of the physical signs of either the early or advanced stages of phthisis are pathognomonic; that their value depends almost entirely upon their existing primarily in certain parts of the lung, and progressively extending to the remainder of the

organ; that the physical diagnosis of the disease, in fact, results from comparison of the phenomena observed in the examination of the different regions of the chest. The importance of this comparison arises from the well-ascertained and acknowledged facts, that phthisis almost uniformly commences in the superior part of the lung, and gradually proceeds downwards; and that the disease, in the great majority of cases, does not affect both lungs equally, but appears earlier, or advances more rapidly, on one side than the other. Hence it arises, that when tubercles are deposited throughout the entire extent of the organ, as in some very uncommon cases, the diagnosis derived from physical investigations entirely fails.

Inspection.—To practise this mode of examination, it is of course necessary that the upper part of the chest should be bare, and also that the patient should be quite at ease, should use no muscular exertion, and should, in whatever position, be perfectly straight. It is desirable also, that the patient should be placed opposite to the light; that he should recline, with his back supported in bed or a high-backed chair; that his head and shoulders should be thrown back. When thus situated, it is not very uncommon that, previously to any investigation, there may be observed, in persons naturally well formed, a difference in the contour of the two infra-clavicular regions; one being full and rounded, the other comparatively depressed and flat. The difference, it is true, is often very slight; but it should not, therefore, be disregarded: for though, when existing alone, it is of little value as an indication, it may be of importance, as a corroborative evidence, when viewed in connection with other signs of the disease. On now directing the individual to take a deep inspiration, there is frequently observed a very obvious variation in the amount of expansion of the two sides; one being elevated, as in health; the other being comparatively motionless. This difference of expansion may be sometimes better appreciated, and on all occasions may be confirmed, by the sense of touch. Thus, by placing the expanded hands at the same time on the corresponding sides, and again telling the patient to take a full inspiration, the unequal expansion frequently becomes increasingly evident.

This is very good advice, but Dr. Hughes must be aware, and indeed admits, that there is no novelty in it. Every good physician employs this means of diagnosis as a matter of course, and frequently derives great advantage from it. We confess ourselves sceptical of the sub-clavicular flattening as an *early sign* of phthisis. Dr. Hughes observes:—

"It may be necessary to mention, that an appearance of sinking may sometimes exist on one side, depending on partial emphysema and consequent increased roundness and fulness of the other. The diagnosis, however, will be evident on further investigation; as not only will the larger side be unnaturally resonant on percussion, compared with other parts of the chest, but will evidently expand less than the opposite side on deep inspiration.

On referring to Dr. Stokes's valuable publication on diseases of the chest, after this paper was nearly written, I was much gratified to find that he had observed the early and frequent flattening of the infra-clavicular regions in phthisis. For the purpose of accurately determining the difference of the two sides, he recommends admeasurement in the antero-posterior direction, by calipers. I have not adopted this mode of ascertaining the point under consideration; as I had not heard, and, I must confess, had not thought of the practice. But I may observe, in reference to admeasurement of the chest, that if alone trusted, or if regarded as superior in accuracy to the eye, it may often lead to error. I have seen this very strikingly exemplified in cases of empyema; in which, though the eye distinguished an evident bulging of one side, it was found, on accurate admeasurement, to be very little or not at all larger, and in one case even less than the healthy side. Dr. Williams has also, in his admirable little work,

mentioned, though very briefly, the difference of expansion in the two sides of the chest at an early period of phthisis; and Andral has observed the occasional occurrence of flattening or depression."

Auscultation.—"The information," we cannot forbear quoting the entire passage, "derivable from this mode of investigation is often nearly equally decisive, and is generally attainable at an earlier period than that dependent on percussion. But the sources of this information are also more variable; and require more delicacy, and a nicer discrimination, than that resulting from the comparative dulness of the two sides. In some cases, the only appreciable difference from healthy respiration is a decrease in the vesicular murmur. As this, however, sometimes naturally exists of different intensity on the two sides of the same individual, it is available, as a diagnostic sign, only when it is very decided, and when it co-exists with others which are of a less questionable character. In other instances, combined with the decreased vesicular murmur, there is heard, in one of either the infra-clavicular, acromial, or scapular regions, a marked increase of the sound of expiration; which in the natural state is nearly inaudible; and which, though it may not be particularly striking when attention is directed only to one part of the chest, becomes sufficiently obvious when compared with that observed in healthy portions of the lungs. In other, perhaps more advanced cases, in addition to the deficiency of the pure vesicular murmur, and to the increase of the expiratory sound, there exists a hoarseness of the respiration,—a diminutive, if I may be allowed the expression, of bronchial respiration. Andral states, that an increase of the natural respiratory murmur —and Dr. Stokes, that puerile respiration—is sometimes observable in the very portion of the lung which is affected with incipient phthisis. This statement may be correct; and it would be far from becoming in me to doubt the accuracy of such justly celebrated observers. I may still be allowed to say, that after considerable attention to the local signs of phthisis and other diseases of the chest, I have never yet had reason to think that pure puerile respiration results as an immediately local effect of either bronchial irritation preceding the deposition of tubercles, or of tubercular consolidation itself. It may indeed be, that the hoarseness of the respiration, of which I am now speaking, is that to which these authors refer. The respiratory sound is indeed louder than in the natural state, and no rattle is combined with it; but it is not, as it appears to me, simply an increase of the pure vesicular murmur, but resembles, as I have already said, a diminutive of bronchial respiration; and is produced, I doubt not, by thickening, or compression of the minute bronchial tubes. As milliary granulations are generally preceded by, and rarely exist in considerable numbers, without some bronchitis, there is not unfrequently added to the signs already mentioned, and sometimes obscuring the more delicate among them, either a small thin mucous rattle, resulting from the admixture of air with the glairy fluid existing in the minute tubes, or a single clicking sound, arising apparently from portions of thick viscid mucus, presenting an obstacle to the passage of air through those of larger calibre. These are not sometimes heard, on a superficial examination; and become audible only at the termination of a deep inspiration, and when the superficial parts of the chest are made tense by drawing the shoulders forcibly backwards, if the examination is made at the anterior, and by crossing the arms and inclining the body forwards when it is made at the posterior part. Two other signs afforded by auscultation may be mentioned; though I believe they are usually not so early in their appearance as those already referred to: they are, a trembling vibration of the voice, or a slight modified bronchophony, and an increased distinctness of the sounds of the heart observable over the affected portion of the lung; when the heart itself, and the great vessels connected with it, are ascertained, by previous or subsequent examination, to be in a healthy condition.

The whole of the preceding auscultatory signs—with the exception of the two last, which result from a partial consolidation of the lung—appear to depend upon thickening, or compression of the smaller bronchial tubes, or upon a secretion from their lining membrane ; and may therefore all exist in simple bronchitis. From it, however, incipient phthisis may generally be distinguished, by the signs being confined to a small portion of the lung, which, in a vast majority of cases, and, in the simple forms of the disease, perhaps nearly universally, is the apex of the organ,—while bronchitis almost as commonly affects the entire surface of the bronchial membrane ; by the continuance of the local signs of the former complaint, without important change ; and by the general history and character of the disease. That the physical diagnosis cannot be always satisfactorily established, has been already acknowledged at the commencement of this paper."

It will be observed that the information given to us by Dr. Hughes coincides pretty nearly with what we have generally counted on—that the respiratory sound is often slightly increased and modified in the earlier stage of phthisis. It matters little what precise term is given to the alteration—*that* is too vague to allow any term to fit it without risk of misconception—and the result of our experience is, that the sign itself must be received with caution, and not depended on over much. Auscultators too frequently make sad blunders.

Percussion.—" The sign afforded by this mode of investigation, though late in its appearance, is perhaps more valuable than most of those that had been before mentioned as an indication of the *presence* of tubercles. Like them, however, dulness on percussion derives its importance, as a diagnostic, entirely from the part of the chest in which it is discovered. Thus, the same amount of dulness in the base and apex of the lung would be very differently regarded by the experienced auscultator. The one might be thought to result from pleuritis or pneumonia : the other, particularly if confined to one side, would be considered indicative of phthisis. I have almost always found that mediate is preferable to immediate percussion, and that the very best plessimeter is one or more fingers of the left hand. I have also found that minute differences of sound are best elicited by gentle percussion ; and that they are more clearly distinguished immediately below the clavicles, than, as is recommended by many authors, by tapping the clavicles themselves. It is desirable, though I do not recollect to have ever met with or heard the observation, that the examination by percussion should be made during forced inspiration, and forced expiration, as well as during the ordinary degree of expansion of the chest ; as, by these means, consolidation, even when separated from the surface by an intervening portion of healthy lung, may be sometimes discovered. When percussion has been performed on one side, the resulting sound should be immediately compared with that elicited by the same means from an exactly corresponding situation on the opposite side, and the strokes alternately repeated in quick succession. By adopting this procedure, slight differences of sound may be often made sufficiently obvious, which would otherwise have escaped detection. If both infra-clavicular regions sound well, and equally well, it is desirable to make a similar examination of the superior parts of the mammary regions : as it sometimes, though unfrequently, happens, that tubercular deposit first occurs in the latter. It is also desirable to examine by percussion the acromial and scapular regions ; though I believe that the sounds afforded by them are not, in the healthy condition, sufficiently clear to indicate slight alterations of structure in the pulmonary tissue. If both infra-clavicular regions are equally though not sufficiently resonant, the sound should be immediately compared with that afforded by percussion of other regions, particularly the mammary, the axillary, and the lateral."

All this is judicious—*is* usually practised by careful and by well-informed men—*ought* to be practised by all.

Dr. Hughes adds ;—

"If then, in a person labouring under bronchial irritation, with either a scrofulous constitution, or an hereditary predisposition to phthisis. there be observed a flattening or deficient expansion of one of the infra-clavicular regions,—if there exists permanent feebleness or hoarseness of the respiration, or an increase of the respiratory sound,—if a slight muco-crepitating, or small mucous rattle be discovered in the infra-clavicular, acromial, or scapular regions of one side (or indeed of both sides, when they do not exist in other parts of the lung), even though there should be no dulness on percussion,—the commencement of phthisis may, I feel assured, be predicted with considerable confidence. It is not probable, and indeed is scarcely possible. that all these signs should be present in the same individual at the same time ; though many may co-exist, and all may successively appear. The greater their number, and the more obviously marked their character, the less hesitation will there be in pronouncing an opinion upon their cause. Dulness or difference of sound, on percussion, if it should not be already distinguishable, will probably too soon make its appearance, unless prevented by appropriate remedial measures ; and high probability will then be converted to almost a certainty."

We have given these remarks, because they embody all that can be said upon a very interesting subject. We cannot flatter our author by professing that we discover any novelty in his mode of looking at it, or any suggestions which wander from the track of the experience of the best informed physicians. But, in our science, it is very useful to dish up a rechauffé of things which ought to be remembered, and are frequently forgot. And he who cooks the hash, or he who serves it may receive some thanks—as comfort for Dr. Hughes and for ourselves.

VII. DR. GUY ON THE PULSE IN PHTHISIS PULMONALIS.

Dr. Guy, as our readers well know, has already given us some interesting observations on the pulse ; he has followed them up in the case of phthisis, and communicates them to the profession in the present number of the Reports. We extract his summary :—

"1. In cases of phthisis pulmonalis, the frequency of the pulse varies within wide limits ; the difference between the extremes amounting to 90 beats.

2. In the same individual, the frequency of the pulse undergoes remarkable fluctuations ; passing, in a few days, through a range of upwards of 60 beats.

3. In five out of six cases, the frequency of the pulse in phthisis exceeds the highest frequency observed in health.

4. The difference between standing and sitting in phthisis is nearly the same for all frequencies of the pulse.

5. The maximum difference between standing and sitting, in all cases of phthisis pulmonalis, falls short of the mean difference in health.

6. From the average results of a considerable number of cases, it appears that the mean difference in health is six times as great as the mean, and three times as great as the maximum, difference in phthisis.

7. On the supposition that the slight effect produced by change of posture is peculiar to phthisis pulmonalis, it forms one of the most constant and certain of its symptoms.

8. On the supposition that the slight effect produced by change of posture is common to more than one disease characterized by increased frequency of pulse, it will distinguish these diseases from others with which they may be confounded ; and these diseases themselves are easily distinguished from phthisis pulmonalis, either by the peculiar character of the pulse, or by other physical signs.

VIII. Mr. Bransby Cooper on Amputation, &c.

Mr. Cooper has made some very interesting observations upon amputation. We extract the following:—

1. "Amputation may certainly be looked upon as one of the most formidable operations in surgery, not merely from its being attended with great suffering and danger to the patient, but also leaving him the subject of mutilation for the remainder of his life. I have been lately informed, that, in Paris, not more than three or four patients out of a hundred live after the operation of amputation: this, however, certainly, does not depend upon any want of skill in its performance by the French surgeons, but from their mode of after-treatment, and principally from their use of charpie, preventing the union by adhesion; leaving the healing of the stump to the granulating process, which is not only infinitely more tedious, but likewise calls much more upon the powers of the constitution.

The diet of the hospitals in Paris is not, as in our public institutions, under the regulation of the surgeons, but of the Government; and the use of stimulants and generous diet is pertinaciously forbidden, excepting in very urgent cases, when, perhaps, a little *vin ordinaire* may be allowed,—a beverage quite insufficient to maintain the powers of a patient under the protracted cure of a large wound by granulation.

To these causes, I believe, is to be attributed the want of success in the result of surgical operations in Paris; as, in dexterity of manipulation, and boldness in its application, the French surgeons are not to be surpassed."

2. "About six years ago, a patient was admitted, under my care, into Guy's Hospital, with a fracture of the lower third of the thigh-bone, from the kick of a horse. The fracture was oblique, and extended to within three inches of the knee-joint. The limb was placed upon a double-inclined plane, and a splint applied to either side of the thigh. On the fourth day after the accident, I discovered, for the first time, a diffused swelling in the ham, extending above the internal condyle, the swelling communicating a distinct pulsation. As the leg and foot retained their natural heat, and indistinct pulsation could be felt along the course of the posterior tibial artery, I considered there were yet hopes of saving the limb, by putting a ligature around the femoral artery; which I performed without removing the patient from his bed; thus saving him the pain and consequent ill effects of being carried to the operating theatre; and had the happiness, not only of saving his life and limb, but of restoring the extremity to its natural function."

3. "From the result of my experience, I consider it as a most unfavourable case where muscle or fascia prevents the adaptation of the fractured ends of a bone; and have generally found such cases terminate unsuccessfully. When want of union arises from constitutional causes, it is often very difficult to ascertain the nature of the defect; for I have, on several occasions, witnessed a great difficulty in producing the union of a fractured bone, in those who seem to be performing every function naturally, and in whom there was not a single symptom indicating the preference of one remedy beyond another. In such cases, I have, in three or four instances, found the administration of mercury, to an extent to produce ptyalism, of the greatest benefit: and have succeeded in producing consolidation, after seton, pressure, and other violent means, had failed. The efficacy of this practice is well worthy of further investigation; as a permanent disunion of the bones of a lower extremity must lead to the necessity of amputation; and if of an upper extremity, it would at any rate render the limb useless for the remainder of life."

4. "A young man, aged 18, four or five days prior to his admission, had, while bathing, trodden upon a nail, which had penetrated deeply into the sole of

the foot. The puncture at the time produced but little pain; so little, indeed, that he continued in the water for some time after, and walked home unmindful of the injury he had sustained: in a few days, however, the foot became painful and inflamed, and he thought he experienced some little difficulty in the movements of his jaw. Becoming alarmed at these symptoms, he applied at Guy's Hospital for relief; and on my attention being drawn to him, the symptoms of lock-jaw were evident. Purgative enemata were ordered; a grain of opium, and two grains of calomel, every three hours; and blisters to be applied, in the course of the spine. On the next morning, the report was, that all his symptoms were much relieved: the motion of his jaw was freer; he could swallow with less difficulty; and the injections had produced free evacuations from his bowels. Gratified with the evident mitigation of his sufferings, I too hastily formed a favourable prognosis; for, on desiring the patient to turn round in his bed, that I might examine the effect of the blister, he was seized with convulsion, and died instantly."

IX. CASES OF HERNIA. By BRANSBY B. COOPER, F.R.S.

The following Cases possess some features of interest for every practical surgeon.

Case 1. On the 26th April, 1839, Mr. Frederic Toulmin was called to Mr. J. aged 68, who was suffering much pain in his bowels and at the pit of his stomach, attended with frequent vomiting; but represented at the same time, that the bowels had been twice moved during the day. Mr. Toulmin, however, being aware that his patient was the subject of rupture, inquired whether it was up; and, upon being informed that "all was right," considered the symptoms arose from an attack of indigestion. Next morning Mr. J. passed a well-formed motion, but still had some vomiting and pain. In the evening the urgent symptoms had returned. Mr. Toulmin now made a close examination:—

The right inguinal region, the side on which Mr. J—— had been for many years the subject of hernia and had worn a truss, presented the appearance of an unnatural degree of flatness, particularly obvious when compared with the opposite side; but which seemed attributable to the absorption of fat from the continued application of the truss. The fullness on the left side, however, was found not to depend wholly on the accumulation of fat, as a small hernia could be felt protruding through the external abdominal ring, but which immediately returned under the act of its examination: there was still, however, to be distinctly perceived a greater fullness on the left than on the right side. Under these circumstances, Mr. Toulmin ordered a pill, composed of calomel and rhubarb, to be taken immediately, and to be followed by a purgative draught in a state of effervescence; and a sinapism to be applied to the region of the stomach. On the 28th, the patient was much the same. On the 29th, the vomiting had become stercoraceous. On that afternoon, Mr. Cooper was called in.

"I first carefully examined the condition of both inguinal regions; having been informed that the patient had been the subject of double rupture; for many years on the right side, and for some months on the left. On taking a general view of the two sides, to ascertain the defect of symmetry, it was at once evident that the left was the larger of the two; not, however, presenting the appearance of a circumscribed tumor-like hernia, but more as if the prominence was the result of a natural disposition of fat, which had been absorbed on the right side from the pressure of the truss, and had thus led to the inequality of size. Upon manipulation, however, there was a somewhat unnatural sensation communicated, as well as a fullness in the left inguinal canal.

I then proceeded to examine the right side, and no protrusion whatever could be felt in the canal; but, upon desiring the patient to cough, the slightest ex-

ertion of the abdominal muscles immediately produced the descent of a hernia, but which was very easily returned into the cavity of the abdomen by the most gentle pressure. The fore-finger was then passed into the inguinal canal, by pushing the loose skin through the external ring; and then desiring the patient to cough, there was complete evidence of the absence of any descent through the internal ring; and therefore nothing here could be discovered to lead to suspicion.

Our consideration, therefore, was again directed to the left side, as being the probable seat of mischief; and its deviation from the natural appearance, slight as it was, could not but create suspicion, when taken in conjunction with the concomitant symptoms. We then agreed upon the propriety of exploring its condition. An operation was proposed to the patient, and acceded to: it consisted merely of laying open the left inguinal canal; in which was found a small empty sac, but not any thing which could in any way account for the symptoms; and we remained, therefore, in the same state of uncertainty as to the cause of the disease. The wound was dressed, and our patient was placed in bed. Some purgative medicine was considered advisable, and was ordered."

There was no material relief of the nausea, the constipation continued, and at 10 a.m. of the 30th, the patient died.

Dissection.—We first proceeded to explore the part subjected to operation; and found that the inguinal canal had been exposed; in which was seen the hernial sac, now containing a small portion of healthy omentum, which had descended probably since death. The sac was laid open, and its contents were most readily returned into the abdomen, not being subjected to the least constriction; —proving the correctness of the opinion formed during the exploration of the previous day, that on the left side there was no existing cause for the symptoms which had proved destructive to life. We then proceeded in our examination, by turning down the anterior parietes of the abdomen, for the purpose of carefully investigating the precise position of the intestines. Upon effecting this, there appeared, in the general view, nothing abnormal, either in their situation or degree of vascularity—not even at the left internal ring opposite to the seat of operation; although the portion of omentum which had descended into the hernial sac was lying close to the opening, but was distinguishable merely from the form which it had acquired from its frequent descent into the inguinal canal. There were, in this situation, however, no adhesions, no inflammation, nor any appearances to which could be attributed the functional disturbance. On examining the condition of the right inguinal region, the seat of the old reducible hernia, we found a portion of intestine in the sac, which proved as easily reducible as it had been during life; but on drawing the intestine out of the situation of the internal ring, it resisted displacement, as if some adhesions had retained it there. On examining the cause of this retention, it was found that a portion of intestine had become strangulated in a small hernial sac which was situated anteriorly to the larger one containing the reducible hernia. This portion of intestine, and its sac which strangulated it, were situated within the cavity of the abdomen; and could not have been relieved, even if the exploration had been performed on the right side; unless, indeed, the dissection had been performed on the hernial tumour while protruding into the scrotum; for which there could be no apparent reason, as the part was so easily reduced by the taxis. It is, however, to be admitted, that had the hernia been cut down upon, within the scrotum, without attempting its reduction, the anterior sac, with its strangulated intestine, would have been brought into view, and capable of being relieved, instead of being returned by the taxis into the abdomen in a state of constriction. But, as the fact of this second hernial protrusion could not be ascertained during life, no one, I consider, would have been warranted in such a proceeding: for if so, the taxis must at all times be considered as an improper practice, and every obstructed hernia must be subjected to operation.

It may however be learned, from this case, that when, after the reduction of a hernia by taxis, the symptoms of strangulation remain unabated, the tumour should, if possible, be made again to protrude, and then be submitted to operation; as it is evident its reduction has not relieved the constriction of the implicated viscus. This case is also highly important, as marking the necessity of a very close examination of the condition of a hernia, after the stricture has been divided external to the sac, before the contents of the sac be returned without the peritoneal covering being opened; for in such a case of complication as has been described, it is very possible that the contents of the larger hernial sac might be pushed into the abdomen, and the smaller sac with its strangulated intestine with it, if the neck of the sac were not opened for the division of the stricture.

Case 2.—I. A., aged 67, was admitted Nov. 18, 1834, with a strangulated oblique inguinal hernia on the right side. He said he had been the subject of hernia for thirty years; but never before experienced any difficulty in its reduction. On Monday morning, while at stool, his rupture descended, and he immediately became sick; when, upon being unable to push his rupture up, he became alarmed, and applied for admission into the hospital. He was then suffering from continued sickness; pulse soft and compressible; tongue dry and furred; skin cool, but clammy; countenance rather anxious. The hernia descended into the scrotum; but was not tender, even upon pressure. He walked to his bed with apparent ease: the reduction of the hernia being then attempted unsuccessfully, he was ordered into a warm-bath; and being subjected to its influence for half an hour, he became faint, and in so favourable a condition, that a further application of the taxis proved apparently effectual, for the hernia was returned into the cavity of the abdomen. On his return to his bed, he expressed himself relieved; and was anxious to have his truss applied, which was immediately done. A common enema was then administered; but it returned immediately, without producing any alvine evacuation. The urgent symptoms, however, soon returned; his pulse became quicker; he passed a most restless night, with occasional vomiting; and the constipation of the bowels remained.

On the 19th, the obstruction was the same, and the matter vomited feculent. Mr. Cooper could discover no hernial protrusion. Mr. C. therefore ordered an injection to be given, by passing an elastic tube into the sigmoid flexion of the colon; hoping to be enabled to remove some hardened fæces, which might prove the cause of obstruction. Considerable difficulty, however, was experienced in the introduction of the instrument, and the injection was merely thrown into the rectum in the usual manner.

Next morning, an enema was again attempted to be thrown up; but he complained of so great a pain from the introduction of the instrument, that the operation was not satisfactorily completed; although two syringes' full of salts and senna were injected, but returned almost immediately. From this period he became much worse; his pulse and countenance sunk; and at half-past six he died.

Dissection.—Peritoneum generally inflamed. The two upper thirds of the small intestines were greatly distended, of a dull reddish hue, and covered with diffused arborescent capillaries: in the lower third, a knuckle of intestine, to the extent of about two inches, was found strangulated in a distinct sac, lying between the right linea ilio pectinea and the bladder, being placed in the natural pouch of peritoneum leading to the internal abdominal ring, and which usually forms the sac of an inguinal hernia. The bladder contained about five ounces of urine, and was peculiarly elongated upwards. The sac, as seen within the abdomen, seemed about as large in size as a large walnut: its aperture, which formed the stricture, was of considerable size, although the stricture around the intestine was pretty firm. The sac itself was not much discoloured, but the intestine

contained within it was of a dark greenish hue. There was no-where any appearance of recent adhesions, or other solid effusions. The pelvis contained about two ounces of dull yellowish-red serum, of offensive odour. A firm and reddish margin of omentum adhered to the front of the sac very firmly, and some bridles of adhesive matter confined the cæcum in the iliac fossa. About three inches of the ileum, below the stricture, shewed evidence of former constriction, the middle part of this portion being slightly delated, thickened, opaque, and injected; whilst the two extremities were marked by an irregular patch or flake, as if cicatrisation had been the result of some former physical compression. A preparation was made of the parts, and are preserved in the Museum of Guy's Hospital. The other abdominal viscera were sound: excepting the rectum, which, at the part corresponding to the promontory of the sacrum, presented a perforation surrounded by a dark ecchymosed spot, which had been evidently produced by the attempts to pass the elastic tube into the colon.

Mr Cooper adds:—

"This case well exemplifies, that the return of a hernia into the cavity of the abdomen, by the application of the taxis, does not necessarily lead to the cessation of strangulation; and that all the symptoms of intestinal obstruction may remain, although there is no longer any abdominal protrusion. Such a condition offers great difficulty in the adoption of the treatment which is to be employed; the administration of purgatives cannot avail, as they tend only to increase the sickness, without offering any hope that they should overcome the mechanical obstruction. Enemata are perhaps indicated, as they may remove accumulated, hardened fæces, which might, indeed, be the sole cause of obstruction, and the hernia prove to be merely a coincidence; a suspicion of this fact possibly would arise, if the injections brought away a great quantity of scybalæ; after which purgatives might be safely used; but if these means prove ineffectual there is, I believe, nothing left to be done, but to have recourse to a surgical operation, which I should, under these circumstances, now never hesitate to recommend. The plan which I should adopt would be, first, to do all in my power to promote a return of the hernia; which, under the circumstances I have detailed, I think may very frequently be effected, as the effectual application of the taxis had already proved that the sac had formed no adhesions; and as soon as the swelling was reproduced, the sac should be cut down upon, and treated as in the operation for hernia generally: invariably however, in such cases, opening the hernial sac. But if, on the other hand, the hernia cannot be reproduced, then I consider the outlet of the abdomen, through which the protrusion had occurred, should be laid bare, and dilated, so as to facilitate the descent; or even, if necessary, so as to expose the hernial sac, and to enable you to divide the stricture. This operation, although dangerous and difficult, offers quite sufficient hope for success to render its adoption advisable; and is far better than to leave a patient to inevitable dissolution, if the obstruction be allowed to continue. Indeed, I will say, further, that the frequent attempts at reduction by the taxis, and the delay consequent upon these trials, are far more dangerous, than the dexterous performance of the operation which I propose. It is, in fact, already granted, by all surgeons, that a patient with symptoms of strangulated hernia, and any concomitant abnormal enlargement about the abdomen, is a fit subject for operation. The exploration proposed, therefore, goes but one step further—to seek for the part, which, although returned within the abdomen proves itself, in its present condition, incapable of performing its natural function."

NEW YORK HOSPITAL.

REPORT OF CASES OF UNUNITED FRACTURE TREATED AT THE HOSPITAL. By JOHN S. HEARD, M.D. late House-Surgeon.

Passing over an enumeration of the various modes of treating ununited fracture that have been resorted to, Dr. Heard describes the following, and pins to it some remarks which we shall quote.

Removing the extremities and connecting the fragments by silver wire.—All these different methods having occasionally failed in effecting bony union,—*it occurred to Dr. J. Kearny Rodgers, one of the surgeons of the New York Hospital, that if, after removing the extremities of the fragments and exciting their periosteum, he could keep them in apposition for a certain period,—firm osseous union would ensue.* He accordingly after sawing off the extremities of the fragments, drilled a hole in the end of each, and passing a silver wire through, drew the bones together, and kept them in co-aptation until firm union was effected. Subsequently, Drs. Mott and Cheesman, colleagues of Dr. Rodgers, were likewise successful in inducing bony union by the same operation. This operation has not, we believe, been adopted in any other place than the New York Hospital. Indeed, the only notice of it that I have been able to meet with, is in a report of a clinical lecture by Mr. Liston, in which he makes these remarks: 'A proposal has, I think, been made, to denude the ends of the bones, drill holes in them, and connect them by a silver wire. It is too artificial a mode of proceeding, and I should fear, that from exposure and bruising of the ends necessary for accomplishing the object, (for perforation cannot be made unless by denuding the bone freely, and holding it securely by some contrivance until the object is accomplished,) that necrosis, instead of union, would be apt to follow.' Now, what Mr. Liston means by 'too artificial a mode of proceeding,' is not very apparent: in what is it more artificial than Mr. White's method? In the simple passing of a silver wire; and is an operation, although successful, to be abandoned because it is artificial? Surely this rule would have a very limited application in surgery. And as regards 'necrosis instead of union,' being more likely to follow, it will be sufficient to state, that this operation has hitherto never failed of success. And are we to refuse to adopt a sure plan of treatment, although it be severe, for one which though less so, still, occasionally, is of no avail?"

Dr. Heard reports five successful cases and one unsuccessful, in which this operation was performed. Whatever the à priori objections to it, the facts deserve consideration.

MR. MALCOLMSON'S CLINICAL OBSERVATIONS ON SLOUGHING OF THE ABDOMINAL PARIETES, CONNECTED WITH ABSCESS OF THE LIVER.*

Mr. Malcolmson observes:—

"Mr. Cæsar Hawkins, surgeon to St. George's Hospital, London, has published an elaborate paper of eighty pages, in the eighteenth volume of the Transactions of the Royal Medico-Chirurgical Society, on what he styles 'Sloughing Abscess connected with the Liver,' in which the gangrenous ulceration of the integuments and other parts around the opening made into the abscess in two of his patients, is ascribed to the peculiar or malignant nature of the disease; and from this and other circumstances, he endeavours to establish the conclusion, that these cases were not examples of abscess of the liver, but of encysted

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* Edinb. Med. and Surg. Journ. Oct. 1839.

tumors of the peritoneal coat. I have, however, found this gangrenous ulceration of the parietes of the abdomen to occur in several cases of common abscess in the substance of the liver, and believe it to depend on a cause quite unconnected with any thing peculiar in the internal disease, and that it becomes a serious obstacle to the recovery of many patients in whom ordinary abscesses of the liver are opened. These views are mentioned in a paper, which the same Society did me the honour to publish in the last volume of their Transactions. But although the symptom in question occurred in the remarkable case there narrated, it is not to be expected, that an opinion advocated by so experienced a surgeon as Mr. Hawkins, and adopted in other publications, should be overthrown by an incidental remark in a paper devoted to other objects. I shall, therefore, take this opportunity to relate several cases in which gangrenous ulceration and sloughing of the edges of the wound occurred, and in which dissection showed the disease to be ordinary abscess in the liver."

Mr. Malcolmson relates several cases, some more, some less to the point. Certainly, however, he proves his case, and sasisfactorily establishes the occurrence of phagedænic ulceration or gangrene of the abdominal integuments as a consequence of common abscess of the liver.

We shall quote one case, not because it is the most conclusive, but because it is the shortest.

Case.—A field officer, many years in India, and who had lived very freely, was admitted with a great swelling, like a child's head, in the epigastrium, extending nearly to the umbilicus; it was hard, except in the centre, where there was fluctuation and a violent arterial pulsation. The patient was early sensible of a fluttering in the side, and he was the first to detect the existence of fluid, the tumour having been at first hard, fixed, and insensible; he had been for some years subject to hepatic disease, and (according to report) to irregular action of the heart and arteries. He was on the sick-report only three weeks previous to his removal to this station in consequence of the march of his regiment; and early in his illness, the bleeding from four leeches produced collapse, from which he did not recover for eight hours. By my advice, an opening was made, from which fourteen ounces of reddish purulent matter, with thick diseased masses and sloughy membranes, were evacuated, the greater part of the latter remaining attached internally. The mind became confused, the wild ideas being of a pleasing kind and not constant. There was a purulent-like deposit in the urine, which, on drying, afforded crystals of a light pink colour. He sank in a few days, sloughing of the parietes of the abdomen, round the wound, commencing in a leech-bite, having previously made some progress.

On inspecting the body, the abscess was found in the convex surface of the liver, which was attached to the diaphragm and anterior part of the peritoneum, and had pushed the stomach downwards and to the left side. The abscess in the substance of the liver was of moderate size, and contained good purulent matter, but a secondary collection of matter had formed within the adhesions, in which the peritoneum was found in a state of slough, protruding in shreds through the wound, the edges of which were gangrenous. The left lobe was hard, and contained tubercles; the gall-bladder contained good bile.

Enough of this. We introduce another observation or two of Mr. Malcolmson's. And first of the *disregard of medical opinions evinced by commanding officers in the army.*

"This patient like the last fell a victim to marching during May and June, the hottest months of the year, in a climate the mean annual temperature of which is 80°; and these months are 10° and 13° above this respectively; with 18° to 21° mean diurnal range, the maximum being a little above 100°, while

the minimum seldom falls below 90°.* At this time, no troops were allowed to march till half-an-hour after sunrise, in consequence of an opinion adopted in certain quarters, that cholera, which is so frequently destructive to troops on the march, is caused by miasmata which would be dispersed by the heat of the sun; an opinion not entirely without foundation, but which should never have been adopted without reference to season, particular climate, and other circumstances, and which proved most disastrous to this small detachment of young soldiers, several others of whom had their health permanently destroyed by liver disease contracted during this march. It is so seldom that military authorities will attend to the best considered medical advice, that too much caution cannot be observed by those who have an opportunity of offering it; nor would it have been difficult to have foreseen the effects of marching European troops on foot, in woollen clothes, and loaded with arms, from half-an-hour after sunrise, till 9, 10, or 11, A. M.; and who had then to wait till their tents came up, an hour or two for breakfast, of which they partook when exhausted by fatigue, thirst, and the direct rays of a burning sun and soil. Nor are the ill effects of marching at such a season entirely done away with, by avoiding this extreme degree of exposure, as I have had twice an opportunity of witnessing when marching in charge of European troops during the hot winds. It is melancholy to think that European soldiers should, in times of profound peace, be exposed at such seasons, which the natives themselves avoid; but it is some consolation to know, that the regular exercise, and greater temperance usual on a march, with the dryness of the air, and of the ground on which the men sleep, do not tend to the production of disease; and that marching in the rainy season, especially in the basaltic districts, where the soil is deep and retentive of moisture, and fever is usually prevalent, is even more injurious. Of this a remarkable example occurred to me in 1828, in six men who rejoined the horse and foot artillery at Nogpore from the coast, and who were all admitted into the hospital on their arrival; and their future history was brought to the notice of the military authorities, in the end of 1829, as follows: 'Four never recovered, one died in May 1829; one has been discharged the service; another has been sent to the coast on sick leave; and the fourth will probably be discharged next committee. The remaining two have had very frequent relapses since; and the non-commissioned officer sent with the party arrived labouring under severe fever.' An order was in consequence issued, prohibiting men from being sent through the jungles during the rainy months; in which it is to be regretted that the season of the hot winds was not included. So much more depends on the prevention of disease in hot climates, than on the most judicious treatment, and it is so seldom that facts such as may make an impression on non-professional men occur, that this digression will not be thought out of place, and was indeed one reason for selecting these two cases for illustration."

Our readers need not be told that the profession has been too much snubbed at head-quarters. Witness the Army Medical Reports—witness the Navy—witness (on land) the Poor-law Commissioners, and their remuneration of medical men. Aide toi et le ciel t'aidera must be the motto of the profession. They will only receive consideration and respect when they assume a disagreeable attitude.

Mr. Malcolmson makes some observations on the use of mercury in hepatitis, which we cite without comment.

"These and innumerable other cases clearly show how erroneous the notion is, still very generally prevalent, that an extreme torpor of the absorbents exists in severe hepatitis, dysentery, and remittent fever, and that this is the cause 'why the largest doses internally, and the most assiduous inunctions externally,

* "Journal of the Asiatic Society of Bengal, Vol. ii. p. 239 and 542."

will sometimes fail in introducing a sufficient quantity of mercury to saturate the system."* And hence the use of calomel in scruples and drachms daily, and rubbing in mercurial ointment, without reference to quantity, under the idea that all that has been taken or rubbed in before has not entered the system, and can therefore have no effect on the disease or the constitution. But if it be true that the mercury is absorbed, and mixes with the circulating fluids, how injurious must such practice be, when the medicine employed is one of such unequalled value in these diseases, but at the same time so energetic in its effects on the various tissues and organs, and whose mischievous effects remain so long in the constitution that has been thus poisoned with it; and how little to be wondered at is it, that many practitioners run into the other extreme of discarding it altogether, or of combining it with a severe and mischievous course of purgation, that may indeed sometimes obviate these evils, but, at the same time, take from our hands the power of using it effectually, and in regulated quantity; and proves directly injurious by irritating the intestinal canal, of itself (in such cases) too liable to take on disease, and by depressing the powers of the constitution in a greater degree than the freest and most effectual depletion. Considering this question as one of vital importance, and without satisfying myself regarding which I could not practice in India with any satisfaction, I was not content with the study of my own cases, but obtained and carefully analysed the records of some other hospitals, the intelligent physicians of which were more or less influenced by the notions referred to: and I found, that when great quantities of mercury had been unsuccessfully employed, (with the exception of extremely few cases, that might be explained by imperfection in the records, or by idiosyncrasy) the gums became more or less sore after the exhibition of very moderate quantities of the medicine, and that in general a slight and evanescent ptyalism took place very early, showing clearly that it did enter the system, and that its usual sensible effects were prevented by the existence of disease overpowering its action. When, therefore, the gums or salivary glands are at all affected by moderate doses of mercurial medicines, and when during their continuance the partial salivation becomes less marked, and the gums less tender, or when the effect of the medicine does not become more evident, or when it too rapidly diminishes on its being omitted, it may be certainly concluded that it will not affect the system in a beneficial manner until an impression is made on the disease by other means, and that it is always necessary to stop its exhibition when a moderate quantity has been prescribed.

It is the irritation of the disease, as above stated, that prevents the mouth becoming affected in liver disease, in dysentery, in peritoneal inflammation, and still more in fever, in all of which there are abundant proofs of the mercury having been absorbed, in the severe salivations, loss of teeth, pains of the limbs, and affections of the periosteum, that too often follow its employment, especially in those cases in which unsuccessful attempts have been made to affect the mouth in the early period of the disease. It is, however, necessary to be aware, that a slight degree of irritation is sufficient to stop salivation for a time, even when fully established, and that, therefore, it may not always be proper to omit the medicine, until it has had a fair trial. Thus the paroxysm of an intermittent will sometimes dry up the mouth during the hot fit; and I have seen the same happen from the excitement of a blister. Hence the observant practitioner must not omit to use any assistance to be derived from the peculiar appearance of the gums, the character of the saliva, and other means by which his judgment may be assisted; it will, however, seldom happen, that, when depletion

* "I have had a couple of Malays daily employed for hours at a time in unsuccessful frictions, the lymphatic system refusing to take up the ointment in any considerable quantity.—*Johnson on the Influence of Tropical Climates.*"

has been as freely used as the case will permit, mercury can be safely continued, when its effects on the mouth either diminish or do not advance under the use of moderate doses. These remarks are also applicable to a rule insisted on by some authors, that a sore mouth is useful as an index of the system being impregnated with mercury, and should therefore, if possible, be induced."

JERVIS STREET HOSPITAL.

DR. CORRIGAN ON THE TREATMENT OF ACUTE RHEUMATISM BY OPIUM.*

Dr. Corrigan has written a very long, and a very interesting series of Clinical Observations on this subject. We shall mark out the main passages, and present them to our readers.

Dr. Corrigan remarks, that it is a desideratum to find a plan of treatment, which will shorten the duration of the disease—prevent the occurrence of the serious complications of pericarditis, endocarditis, &c. and not reduce the strength of the patient. He believes, that the treatment by opium will be found to possess the advantages sought for. It shortens the duration of the disease; it enables the patient to pass through so painful a disease with comparatively little suffering; it husbands his strength, so that when convalescent he rises from bed with comparatively little depression of vascular energy and muscular strength; and lastly, it diminishes very remarkably the tendency to the occurrence of such complications.

After relating eight cases, Dr. Corrigan observes:

"The most important rule to be remembered in employing opium for the cure of acute rheumatism is, *that full and sufficient doses* shall be exhibited. I have heard of opiate treatment having disappointed some who have tried it. On inquiry I have learned that in those cases it has been given only to the extent of a grain every fourth or every sixth hour. This is not 'the treatment of rheumatism by opium;' it is making the patient worse than before; it is inflicting on the patient the mischief arising from the stimulant effects of the drug, and withholding from him all the benefits of its sedative influence. The opium should always be increased in dose, both in frequency and quantity, until the patient feels decided relief; and should be then kept up at that dose until the disease is steadily declining. The first indication that tells the practitioner, he has reached the proper dose, is the statement of the patient, who in reply to an inquiry as to how he has passed the night, probably says that he has not slept, but that he is free from pain and feels comfortable. This effect having been attained, the opium may then be continued in repetitions of the same dose as to frequency and quantity. Clarke's Case, No. VIII. shows the rapidly good effects of the large doses. A relapse set in: he got two grains of opium every third hour, uninterruptedly for twenty-four hours. He took sixteen grains of opium within twenty-four hours, and the relapse was suddenly cut short. In Rooney's Case, No. III. in the first day eight grains of opium were administered. The dose was then increased to twelve grains within the twenty-four hours for the second, third, and fourth days; and on the fifth day he was taking bark. In Dr. Aldridge's Case, the quantity taken in a fortnight amounted to about 200 grains. I think about ten or twelve grains in every twenty-four hours, will be found the average quantity required. The tolerance of the remedy is a remarkable feature in the treatment, and may, I think, be fairly adduced as an argument in favour of its propriety. The head is not affected by the large quantity

* Dublin Journal, Nov. 1839.

of opium administered. This is remarkably shown in Dr. Aldridge's Case, (Case VI.) where the head was not injured by the opium, even though there had been previously a tendency to derangement of cerebral functions in all previous febrile affections. There is another singular circumstance connected with the exhibition of the opium. It is the occurrence of diarrhœa while the patient is using the opium even in full doses; in some instances, the diarrhœa becoming so troublesome as to require starch enemata, or chalk mixture, with kino. It is seldom necessary to purge the patient while administering the opium: indeed the pains are sometimes brought back by the administration of a purgative, either from the patient catching cold in rising from bed, or from the irritability produced by the action of the purgative. The patient's bowels, if they have not been constipated in the commencement of the attack, may be not only safely, but with benefit, not disturbed more than once in two days.

In most cases, Dr. Corrigan applies embrocations to the affected joints—warm spirits of turpentine, or camphorated spirit or simple decoction of poppy-heads, or, when only slight stiffness with little or no swelling remains, a liniment of equal parts of ol. terebinth, and ol. camphorat. with one drachm of sulphur to each ounce of the liniment.

"There arises in the progress of a case of acute rheumatism a stage that is sometimes perplexing. The fever is very much abated, the skin is covered with almost constant perspiration, even sometimes to the degree of producing a miliary eruption, and so profuse in quantity that the patient, when the clothes are raised, steams like one in a vapour bath, and the skin becomes clammy, pale, and soddened; the pains become erratic, and the pulse becomes quicker and smaller: in such a stage, and with these symptoms, the conjunction of sulphate of quinine with opium is the combination that, I think, will be found most beneficial. K.'s Case (No. V.) is an example of such as I have described, and shows the good result of the exhibition of the combination of quinine and opium in that particular stage. Another remedy of considerable efficiency, when the acute stage is passing away, is the mist. guaiaci. The preparations of guaiacum have been an old and favourite popular remedy in rheumatism, and have fallen, perhaps undeservedly, into comparative disrepute. As it is not my wish to travel beyond the acute form of the disease, I shall make no observation on the use of the hydriodate of potass, or of any of the remedies adapted to rheumatism when passing into a chronic state. There is one form of acute rheumatism in which the opiate treatment will cause disappointment, should the practitioner trust to it alone. It is that form which we sometimes meet with, in persons whose habits of living, and perhaps hereditary tendency, give a predisposition to gout, and in whom, when rheumatism does appear, it is not genuine rheumatism, but a combination of gout with rheumatism."

We have long been in the habit of using opium freely in acute rheumatism, but never, we confess, so freely as Dr. Corrigan. His plan is worthy a careful trial, and, if it bears out its author's anticipations, it will be highly valuable.

PHILADELPHIA HOSPITAL.

TWO CASES OF RUPTURE OF THE AXILLARY ARTERY, DURING THE REDUCTION OF DISLOCATIONS OF THE HUMERUS.

Some few years ago we presented our readers with an account of a paper, published by M. Flambert, a surgeon of, we think, the Hôtel Dieu at Lyons, in the Répertoire. In that paper the author detailed seven cases of serious injury inflicted during the reduction of dislocations of the head of the humerus. Amongst other accidents there were, we know, laceration of the brachial plexus, and of the axillary artery.

The following cases quoted from Dr. Gibson's Institutes of Surgery by our contemporary of Dublin, will form a pendant to those we have alluded to.

Case 1.—It was that of a man, aged fifty, of intemperate habits, whose left shoulder was dislocated by the fall of a heavy chest. The first practitioner mistook the accident for fracture, and mistreated it accordingly, and the earliest attempt at reduction was near three weeks after. The most forcible, but otherwise judicious, means were tried without effect; and the man still anxious to have a useful limb, no matter at what expense of suffering, came to Philadelphia to consult Dr. Humphreys, by whom he was referred to Dr. Gibson, two months after the receipt of the injury.

By the abstraction of a large quantity of blood, the persevering use of the pulleys, &c., for about an hour and a half, till the patient was quite exhausted, the reduction was effected.

About an hour after

"There was a general swelling about the deltoid and pectoral muscles, which was noticed both by Dr. Humphrey and myself; but supposing it to be an approach to inflammation, a consequence to be expected after the efforts made to restore the head of the bone, nothing was appreheded from it. The swelling, however, increased very slowly for several hours; and although remarked by the house pupils and attendants, did not excite any alarm, inasmuch as the patient complained of little pain, and conversed cheerfully with some of his friends during the greater part of the afternoon. About six o'clock in the evening, Dr. Brinton, one of the house-pupils, visited him, and hearing that he had a short time before turned over in bed in order to sleep, and struck with the unusually palid appearance of his face, was induced to suspect that some unfavourable change had taken place. These suspicions were confirmed, for, upon examination, the pulse was found scarcely perceptible, and the whole system so much sunk as to render recovery impossible. Leaving Dr. Hopkinson in charge of the patient, Dr. Brinton immediately repaired to my house, and informed me of his condition. Before I could reach him, however, he expired. The appearance of the shoulder and adjacent parts soon explained, it seemed to me, the nature of the case; for the pectoral muscle was considerably elevated, and the skin for some distance about the chest and shoulder discoloured and ecchymosed, showing, in all probability, that some large artery or vein had been torn across, during the efforts to reduce the luxation. To determine this point with accuracy, I obtained the consent of the patient's friends to examine the body; and at ten o'clock next morning, the dissection was made by Drs. Horner and Lawrence, in presence of Drs. Humphrey, Jackson, the house-pupils, and myself.

Under the axillary vein, as it passes near the glenoid cavity, a large mass of coagulated blood was observed; and on clearing this away, *the axillary artery was seen protruding with its mouth open, having been torn directly across*, and separated from its connexions. Upon further examination it was discovered that the head of the bone, at the time of the luxation, had been carried downwards into the axilla, about an inch and a half below the glenoid cavity, where it formed a white ligamentous, cup-like, socket in the subscapularis muscle, and pressing upon the axillary artery, produced such a degree of inflammation as gave rise to a copious effusion of coagulable lymph, which united the artery completely for some distance to the capsule of the joint, where it surrounded the neck of the bone. The lower part of the capsule was torn and separated from the neck of the humerus; the upper part remained entire, and was very much thickened. The head of the bone filled completely the old sockets or glenoid cavity. Beneath the deltoid muscle there was a large hollow filled with blood, and the whole arm, as far as the elbow, had been extensively injected with the same fluid. The os humeri was carefully dissected from the

condyles to its head, and the periosteum entirely scraped off, without showing the slightest vestige of a fracture. The long tendon of the biceps was found considerably elongated, but not ruptured."

Case 2. It was that of John Layton, ætat. thirty-five, a muscular, athletic man, about six feet high, accustomed to the use of a pint of spirits daily. The left os humeri had been dislocated nine weeks before, by a violent fall on the shoulder Before coming under Dr. Gibson's care, four different attempts had been made at reduction, much force used, and once the body suspended upon the axilla over the top of a door. For nine days he was kept on low diet, lost ten ounces of blood daily, gentle motion was given to the arm in various directions every day, and careful friction with oils applied to the shoulder. After this the reduction was attempted.

The plan was pursued unremittingly until the 15th of March, on which day it was determined to attempt to restore the bone to its natural situation. After giving a description of the attempts at reduction, he says:

"Our efforts, notwithstanding, were continued in the most gentle and cautious way possible, sometimes by the pulleys, sometimes by the heel in the axilla, when we had the satisfaction at last, to find the head of the bone gradually approach, and finally enter, with an audible snap, the glenoid cavity; but not until the lapse of an hour and three-quarters from the commencement of the operation.

The patient, after being put to bed, complained chiefly of weakness, of numbness throughout the arm, of slight excoriation of the arm-pit, and bend of the arm. In other respects, he said, he was comfortable, and slept during the night without an opiate.

March 16. I saw him at eight in the morning, and observed a general swelling over the deltoid and part of the pectoralis major muscles, but not more than could have been expected under similar circumstances. Upon pressing, however, upon the most prominent part of the swelling, I was surprised to find a distinct pulsation of an aneurismal character. During the day both the swelling and pulsation slowly increased, and satisfied me that an aneurism existed in the axillary artery. Dr. Barton saw the patient in the afternoon and drew the same conclusion."

It was determined in consultation to tie the subclavian artery, which was done the second day after the operation. On the seventh day after the patient died, gangrene of the arm having supervened. The artery was found closely adherent to the head of the bone and capsular ligament by dense cellular or ligamentous substance, so that it appeared impossible to effect the reduction of the head of the bone and not cause the rupture of the vessel. Such had taken place; the inner and middle coats of the artery where it adhered to the bone had been ruptured, and the external expanded into a true aneurismal sac; this had burst posteriorly, and formed a diffuse aneurism. The aneurismal walls were so well defined and compact, that Dr. Gibson is inclined to think the aneurism existed prior to the last attempt at reduction, and had been then burst open.

Dr. Gibson concludes, and we think him right, that where no adhesion exists between the artery and surrounding parts, the operation may be done with safety; that, on the contrary, when adhesion does exist, (and of this we have no means to judge,) rupture of the vessel must be an inevitable consequence, whether the reduction be effected by force or by the most gentle means.

He is disposed to condemn, in the most unqualified terms, all attempts at restoration of *ancient* luxations of the humerus and other bones, except in cases where the patient is remarkably thin and debilitated, and where there has been little or no inflammation at the time or subsequent to the displacement.

CLINICAL REPORT. By ALEXANDER WATSON, Surgeon to the Royal Infirmary of Edinburgh.*

Mr. Watson's main object is to discountenance a rage for operating, and to shew that great operations are often a great evil.

"Fortunately, however," he says, "the cultivation of morbid anatomy and pathology has done much to lessen, to a very surprising extent,† the number of really necessary operations, not only by pointing out more rational means of curing diseases, but also by showing the impropriety of resorting to operations, in many cases where the general system is either the source of the local disease, or is so much affected that success is hopeless; and, consequently, that operation, in such cases, is cruel as well as absurd. The increased attention, also, which is devoted to the study of anatomy and surgery, is rendering every surgeon quite competent to the performance of all the ordinary operations of surgery, both from their greater simplification and being better understood.

In consequence of the undue importance attached to operations, the principles deduced from experience, by the highest authorities in the profession, as to the propriety or impropriety of operating in particular cases, are either misunderstood, or are disregarded for the vanity of a display in flourishing the mutilating knife upon a fellow-creature, even in desperate or hopeless cases. In some such cases the chief argument I have heard used for operating was, 'to give the patient a chance,' as if the shock from the amputation of a limb was calculated to revive the expiring embers of life! In others the ingenuity of the surgeon seemed put upon the rack to create reasons 'to justify the operation,' which, if a measure really necessary to preserve life, required no other justification than that there are good grounds for expecting success.

But when a surgeon either resolves to perform a capital operation, which endangers the life of the patient, upon a chance of success, implying that success, though possible, by some fortuitous or miraculous escape that may occur, is very improbable; or finds himself under the necessity of ransacking his ingenuity to contrive arguments to justify his proceedings, he may well pause and inquire what is the rule of duty in such a case. Should he not inquire what are the principles of the profession, which reason and experience have established as applicable to such cases? what the duty of one man to another? whether or not he would sanction the operation if he was himself the patient, or if the case was that of his own child?

In cases of injury or disease capable of being cured only by a capital operation, before resorting to this measure, the following questions should always be satisfactorily answered; 1st, Is the operation necessary to save the life of the patient? 2nd, Is there a fair prospect of success? Unless the case stands this simple test, the performance of the operation would be decidedly improper.

In proof of the correctness of these statements, by acting upon the principles here described, I have, during the last four years that I have been connected with the Infirmary, performed only 16 amputations of the extremities, 13 having been in the house and 3 in private. These operations were performed partly on account of severe injuries, and partly for diseases of the bones and joints. They consisted of amputations above the knee, 7; of the leg, 4; of shoulder-joint, 2; of arm above elbow, 3; making altogether, 16. Of these, 15 recovered and only one died. But had these principles been deviated from, and had other

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* Edinburgh Journal, July, 1839.

† "Mr. Lawrence of St. Bartholomew's Hospital says, in his Lectures, to an extent of 'one-half or two-thirds within the last twenty-five years.'"

cases of patients in a dying state being operated on, to give them 'a chance,' my success would have been very different."

We extract an observation or two, on the subject of injuries of the head. Speaking of *concussion*, Mr. Watson remarks:—

"That the disorder or lesion produced by concussion is chiefly situated in the hemispheres of the cerebrum, seems highly probable, from the state of the patients almost completely resembling that of animals from whose heads these hemispheres have been removed. According to the experiments of physiologists, (see Müller,) animals in this state could be kept alive for a great length of time; they lost their intellectual faculties, as also their sight and hearing; but they retained muscular irritability, and those functions which are, in a great measure, independent of the hemispheres of the cerebrum. Hence they swallowed food, and the animal functions were carried on, but they seemed as if always asleep and disliked to be disturbed. These functions, though (for their perfect state) dependent on the integrity of the whole nervous system, are carried on chiefly by the influence of the *medulla oblongata*, the spinal cord, and sympathetic nerve; while the disturbed and diminished power of the cerebrum tends to lessen, and in some cases to annihilate their power.

He makes some observations on compression of the brain arising from extravasation of blood. We extract the following:—

To ascertain the situation of blood effused within the cavity of the cranium with precision, is a problem beset with many difficulties. There are three situations in which it may occur, namely, between the skull and the *dura mater*, between the *dura mater* and surface of the brain, or into the interior of the brain. But the effusion does not always take place at the situation of an external injury, as is remarkable in cases 4, 5, and 6. On the contrary, it often takes place in the opposite side of the cranium, and yet the symptoms are precisely similar.

It is of importance to observe, however, that when the effusion is at the base of the cranium, compressing the *medulla oblongata*, death is generally immediate; whereas, if the blood is situated at any of the sides or upper part of the cranium, the patient, though he becomes apoplectic, may live for a considerable number of hours or even days.

Another circumstance worthy of remark, is that relating to the opinion stated by the late Mr. Abernethy and Sir B. Brodie, that blood is never poured out in such quantity between the bone and *dura mater* as to produce dangerous pressure upon the brain, 'except where the middle meningeal artery has been lacerated.'* Sir B. Brodie further states, that he had not seen a case of laceration of this vessel, without a fracture running across its bony canal. But he adds, that some cases of this artery being opened without fracture of the bone have been recorded by others.

Here, then, we have evidence, at least, of the frequent occurrence of rupture of the meningeal artery, when the bone, along which it is situated, is fractured.

In cases, therefore, accompanied with symptoms of compression of the brain from effusion of blood within the cranium, when death does not take place suddenly, when there is an injury in the temporo-parietal region, but more especially when there is a fracture of the skull in this situation, and bleeding from the ear, the *probability* of this being the seat of the effused blood amounts almost to *certainty*.

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* Medico-Chirurgical Transactions, v.—xiv.

UNIVERSITY COLLEGE HOSPITAL.

DEATH FROM THE USE OF THE TWISTED SUTURE FOR A VARICOSE VEIN.*

A dyer, aged 59, of intemperate habits, was admitted June 19, 1839, with an ulcer on the right leg, and many tortuous veins connected with it. The sore was at first covered with the water dressing, and after the man's bowels had been cleared out with a dose of calomel and senna mixture it was determined to try to cure the varicose veins with twisted sutures, and three were at once made; one about four inches above the knee, and two others below it.

Much suffering and swelling followed the suture in the thigh; it was withdrawn on the 26th.

27th. Very severe pain in the left shoulder and arm. Two or three shivering fits, each of half an hour's duration, succeeded by heat and other febrile disturbance.

28th. Shoulder and arm still exceedingly painful. Another shivering fit this morning. Considerable redness and hardness at inner side of the thigh, in the course of the great saphænal vein. The two other pins were removed. On the 8th of July, the man was attacked with diarrhœa. There was low fever. On the 12th, abscesses in the thigh in the situation where the upper suture had been applied. Openings made for the discharge of the matter. On the 17th, he died.

Dissection.—Surface generally of a yellow tinge. *Thorax:* lungs extensively adherent to the parietes of the chest, especially the left, and the adhesions not of long standing. Tubercular deposits in various stages within the lungs. In the pericardium three ounces of serous fluid. Heart somewhat enlarged and softened. Osseous deposits in the semilunar valves of the aorta, and under the lining of left ventricle.

Abdomen —Left kidney contained pus. The right iliac vein also had pus in it as high up as the vena cava. The crural vein was occupied by purulent matter, as well as the popliteal.

A large quantity of purulent matter was found under the fascia lata and in the intermuscular cellular tissue. The right hip and knee-joints both contained pus, and within the left shoulder-joint, and in the textures external to it, pus was likewise detected.

Were the "tubercular deposits," in the lungs, "secondary deposits?" We are inclined to think that the latter were mistaken for the former. Be that as it may, the case was clearly one of phlebitis and secondary deposits, from the operation. The question is, can such operations be justified? We are not sure of that. The risk is considerable, the utility far from assured. Mr. Cooper, rather an apologist than otherwise, for the operation, observes:—

"The case calls our attention to the question, under what circumstances is the attempt to cure varicose veins of the leg justifiable by any means attended with a risk of exciting this formidable disorder?

I should say, certainly not, if the varicose veins, and the ulcer connected with them, admit of relief from other plans, and are not producing severe annoyance, nor are generally interfering with a person's endeavour to gain a livelihood.

Then, if this kind of twisted suture be adopted, ought we to apply it at once in several places, or only in one, repeating it afterwards if another is necessary? The latter method is probably the safest. In particular, I advise you not to adopt the practice at all in unfavourable constitutions."

Perhaps Mr. Cooper's advice might be extended to not performing the operation at all in *any* constitution.

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* Med. Gaz. Oct. 25, 1839.

SPIRIT OF THE BRITISH AND AMERICAN PERIODICALS, &c.

SKETCHES OF MEDICINE IN THE EAST. By VALENTINE MOTT, M.D. OF NEW YORK.

These sketches, or as their able author terms them gleanings, are contained in the American Journal of the Medical Sciences for August, 1839. They present a good deal to interest us, and may help us to the formation of a just opinion on the probability of a political regeneration of the East.

1. *The Medical School of Egypt.*—Every body knows that Mahomet Ali's policy has been to surround himself with European agents of his despotism. Vanity has, no doubt, had something to do with this—selfishness has had much more. But, whatever the motive, the effects, in the instance of medicine and a medical establishment, are indubitably beneficial.

"From a fear too no doubt, that a sufficient inducement could not be held out, for foreigners of merit to take up their residence in this benighted country, the Pasha has from time to time been in the habit of sending to the medical schools of Europe, and particularly of France, a number of young Arabs, to be educated at the expense of the government. In this way a ready communication is had with the foreign practitioners and the native eléves of the country, who assemble in the hospitals and medical schools, until the former have acquired a sufficient knowledge of the Arabic language to impart instruction to them in their native tongue. In this way we have witnessed the lessons of the professor conveyed to the pupil by a young Egyptian physician who had been educated in Paris. French being the language used for this purpose. The Arabic, as I was informed by the professors, is extremely difficult to be acquired, and those only who had resided in the country for eight or ten years, were able to read it and above all to speak and understand it sufficiently well to hold intercourse with the natives and impart instruction directly to the pupils."

"The medical school of Egypt, which for some years has been located at *Abou-Zabel*, is now removed to *Esbekie*, in the immediate vicinity of Cairo; the former being too remote from the capital, to enable the professors, from their necessary duties in private practice, to do full justice to the institution. The school makes part of a large and well arranged military hospital, beautifully and pleasantly situated on the western bank of the Nile, in the suburbs of Cairo. This hospital contained thirteen hundred patients when we visited it. The immediate connection of the medical school with this large hospital, together, making one great edifice, is in my opinion an admirable arrangement for the benefit of the pupils, and well deserving of imitation in other and more enlightened countries. The lecture-rooms of the professors are all exceedingly well arranged, and the amphitheatre for anatomy is particularly well constructed, with an abundance of light from a cupola on the top. A large and well arranged pharmacy, with specimens of every kind of domestic and foreign drug, while it abundantly supplies medicines to the wants of the hospital, serves as a means of instructing the students. A large laboratory is connected with it, in which the new chemicals, such as alkaloids, and others, are prepared, to answer the demands of the physicians, and at the same time extend information to the pupils, by making them acquainted with chemical pharmacy.

The number of pupils attending the lectures at the time of our visit, was two hundred and sixty. They are not only attendants upon the lectures or the professors, but residents in the hospital, in order to observe the treatment of the pa-

tients, and to become familiar with the almost endless forms and features of disease.

They are all educated at the public expense, have their quarters in the hospital, where they eat and sleep, and are obedient to a regular military and medical discipline, and rank as *sous aides*, in the surgical staff of the army. Here they are compelled to remain from three to four years in the constant pursuit of their studies, and in the regular observance of disease, at all times obedient to the call of their superiors, and ready to administer to the wants of the patients.

The beautiful order and methodical arrangements, as well as neatness, in every part of this establishment, surprised and delighted me. It unites the activity of the French, with the cleanliness and good system of the German hospitals, and therefore may be said to have the excellence of both."

The anatomical museum is very respectable, and will serve as the nucleus of a good collection. It consists mostly of bones, casts, and wax models, with the excellent tributary aids, of parts, and the whole subject, of the ingenious invention of Doctor Auzoux. From the expense of alcohol, and the great waste, owing to the excessive heat and dryness of the climate of Egypt, few or no specimens of morbid parts can be preserved as wet preparations. They are compelled to resort to drawings and wax models, to perpetuate their similitude.

The apparatus for the illustration of the physical sciences is neat, and sufficiently ample.

The Civil Hospital is situated in the City of Cairo, and is located in a spacious building, but recently one of the palaces of Mahomet Ali. It is placed very favourably for good air, near the principal square of this very curious and truly oriental city. It is an admirable transfer of the noble and superfluous domain of a single individual to humane and charitable purposes, to the wants, necessities, and the afflictions of the poor and the diseased. Dr. Mott was informed that it had only been established for one year, and was but the beginning of an asylum and a home for the suffering and the sick.

"It contained between two and three hundred patients, besides apartments, especially appropriated for a lying-in establishment. Although there is a male and female department in the same building, there is the peculiar eastern vigilance, and harem-like care, that the females shall not even be seen by the male patients. On no pretence, whatever, is any male admitted into the female part of the hospital unless he be a professional man, and then he must accompany a medical officer of the establishment, who only has authority to introduce him.

Connected with this maternité, is a school for the education of young women, to fit them properly to be accoucheuses or sages femmes. It has a well organised class of young females from the age of fifteen to twenty, under the care of a French professor, aided by a young Arab, whose acquaintance with the French language enabled the pupils to comprehend readily the lessons of the principal. The class consisted, on the day of our visit, of sixteen. They were dressed as Europeans, were very neat and respectable in their appearance, and exhibited various tints, and shades of colour, from the tawny Arab, to the jet black Nubian and Abyssinian.

They were all assembled in the class, at their lessons, when we entered, and were receiving instructions from the professor. Their note-books were in Arabic and French. I was requested to test the practical knowledge of one of them the mannikin. One, the most convenient, and as black as ebony, was requested to come forward. Different questions in French were put through the young Egyptian, and on the machines the pupil proved by her manipulations with the fœtus, that she not only comprehended perfectly the question, but that she understood well the subject.

When their knowledge is thought sufficient, they are permitted to exercise the art upon the patients of the institution. In this way, after a residence of some

time in the hospital, subjected to regular discipline and instruction, they become very competent practitioners of this branch of the profession. They informed me that all of them were educated at the expense of the Pasha, and that his object was to place them in the harems, and thereby dispense with male obstetricians; that Mahomet Ali, from time to time, was in the practice of purchasing young females at the slave market at Cairo, and placing them in the maternité for instruction. In this way he kept up a constant supply for the wants of the different harems of his family and favourites.

This establishment is undoubtedly founded upon the liberal and humane plans of the French, who annually educate, and send forth a large number of well instructed and competent young women, not only in every direction through their own provinces, but into other countries. It is to be hoped, that in Egypt, a more enlarged and liberal view will be taken of this system, and ere long that its salutary and benign influence, will be extended, far beyond the gardens and walls of the harems; and that the almost countless poor, may receive something in return for what they labour so hard to support

Every facility seemed to be afforded in this obstetric school, in preparations, apparatus and instruments, as well as the living subject, to make the pupils competent and useful practitioners."

2. *Medical School at Athens.*—"An attempt is making at Athens, the present capital of the modern Greek empire, to organize a medical school, by several well educated and respectable Bavarian physicians and surgeons, who are attached to the court, and whom King Otho has induced to settle in his country. At the time of my visit, (April 1838), they had from nine to twelve pupils, natives of the country, who were lectured to by the Germans in the modern Greek language; the professors from a residence of several years in the country, being able to impart instruction to the pupils in their native tongue. Although it is the merest beginning of a medical school, it is nevertheless praiseworthy and honourable to its present founders, and may be the germ of an institution, which shall move onward hand in hand, with the regeneration of poor fallen Greece."

Athens possesses at this moment a most excellent military hospital, arranged upon the modern European plan, capable of containing very comfortably several hundred patients. Also a highly respectable and well arranged cabinet of Natural History.

"From what I saw of the diseases of Greece, both in the hospital at Athens, and in the practice of two of the physicians attached to the court of King Otho, they appear to be generally of an inflammatory character. This is especially true with those of a febrile form, and the brain seems to be the organ in which this is most particularly manifested. All their endemic fevers commence with strong synochal symptoms, and are remarkably fatal to new comers during the cerebral determination. If they escape from this stage, they are precipitated very speedily into a profound typhus, or it assumes an intermittent fever of the quotidian or tertian types. These latter continue with great obstinacy in defiance of quinine and arsenic, and frequently terminate fatally in general hydropic effusion, and hypertrophy of the spleen.

The Greeks are generally a very temperate people, and from living in a mild climate, subject to few sudden variations, and an atmosphere the purest and possessing a clearness and transparency that far exceeds any thing I ever met with in any other country, are consequently a hardy and vigorous race. The great distance at which an object can be seen, and the deception thence arising in the computation of hours or miles in travelling, was a frequent remark with my companions and myself, and we found that the same thing had been noticed by forcigners resident in the country.

It ought to be recollected by all who visit Greece, that an abstemious mode of living, and particularly great moderation in the use of stimulating drinks, is

essential to the preservation of health. From my own observation less wine can be borne in that climate, than in any I ever visited. Every year at Athens I found that the endemic fever was fatal to many Europeans, from imprudence in indulging in their accustomed quantity of stimulating drinks, particularly wines."

3. *The Lepra Græcorum.*—"The Lepra of Greece I had long felt a great desire to examine, and took the opportunity of visiting some cases of it through the politeness of Dr. R. and of making numerous inquiries of him as to the general character and treatment of this ancient and curious disease. It bears a very striking resemblance to the venereal disease, in its primary and secondary or confirmed stages. So marked indeed is the coincidence, that it does not appear to me to be going too far to say that it may be the parent or progenitor of lues venerea. It attacks primarily the genital organs, then the throat, skin, and lastly the bones. It is generally a more chronic affection than lues as we commonly see it, but it assails the same parts and resembles many cases of lues, such as I have often seen; so much so, that Dr. Jackson of New York, my travelling companion, as well as myself, confessed, that it would not be in our power to discriminate between them. The lepra on the genitals, and in the throat is commonly attended with more hardened and elevated ulcerations, with more hypertrophy of the surrounding tissues, than ordinary cases of lues, but such precisely, as I have seen in the venereal disease. The affection of the skin resembles the worst and most vitiated forms of syphilitic eruption, such for example as the large elevated, conical and concentric scab.

Such is the horror that the Greeks have of this disease, that they abandon their dearest and best friends; and the unfortunate victim is frequently obliged to seek refuge among the beasts of the field, and in the recesses of the mountains. An instance of this I saw in the plains of Argos, of a wretched man, affected with this loathsome malady, shuned by every one, friendless and homeless. Even when it appears among the better part of these people, it is considered a sufficient ground in either sex for a divorce, and it is sanctioned both by the civil and ecclesiastical laws.

Lepra is no longer considered as an incurable disease. It is more intractable and obstinate than common forms or cases of lues venerea, but is found to yield to proper treatment. The remedies most successful, are the same as in syphilis—mercurial and arsenical. Of all the forms of mercury, the corrosive sublimate, with sarsaparilla, is found the most efficacious. In obstinate cases, after the mercurial treatment has been long continued, without curative effects, the arsenical is substituted with the happiest results. The analogy here, too, is very striking, as every one must have observed the same thing in the treatment of the venereal disease."

4. *Facility of Union by the First Intention in Egypt.*—"The Egyptians are a very temperate people from necessity; there is no wine or ardent spirits peculiar to the country. To this, more than to climate alone, we would ascribe the greater readiness with which their diseases yield to treatment. From the state of nature in which they live, there is very little disposition to inflammation; and hence the readiness with which they recover from wounds, and the remarkable success of surgical operations.

The salutary and desirable process of union by the first intention, or adhesion, is much more common and complete than in any part of Europe, or even in America. This has been ascribed by some to the heat and dryness of the climate alone; but we would give a part of the credit to the sound and natural constitutions of the Arabs. In the more civilized and refined countries of Europe and America, there is frequently either too much inflammation, or too high a degree of irritability, to have this object accomplished. Both these states

of the system are well known by every surgeon to interfere with, and indeed frequently to frustrate, this process entirely.

Even the wound made in the operation of lithotomy, which is performed in the lateral way, except that the prostate and neck of the bladder are cut directly downwards towards the rectum as recommended and practised by Vacca, frequently heals by the first intention, as I was informed by Dr. Pruner, a very intelligent and distinguished German surgeon, at Cairo, who ranks high in the confidence of Mahomet Ali.

My experience in New-York warrants me in saying, that the adhesive inflammation is, *cæteris paribus*, more favourable for union by the first intention, during our hot seasons, than in the cold weather of winter. This I have noticed in an abundance of instances, and have been in the habit of ascribing it to the lesser degree of inflammation that follows operations and injuries in the summer months."

Aneurisms are almost unknown in Egypt.

5. *The Plague.*—"Since visiting a number of oriental cities, it is no longer surprising to me that they should, from time to time, be scourged with typhoid forms of disease, and particularly the appalling and terrific forms of it, denominated the peste or plague. As long as their cities remain, and their habits continue, it must be, from time to time, the companion of the Mussulman. The features and appearance of this disease, like the Asiatic cholera, are frightful indeed, from the overwhelming operations of the contagion, infection or poison that produces it upon the nervous system. It certainly resembles the effect which some of the more deadly vegetable and animal poisons produce upon animal life. From the mild vegetable miasm that produces intermittent and remittent fevers, there is a variety of causes, vegetable and animal, differing in intensity and violence, until we arrive at the most concentrated of all, which is the *materies morbi* of plague itself.

From the facts which I collected at Cairo, Alexandria, Smyrna and Constantinople, in each of which places the disease existed, and in the first of which I saw a number of cases, my belief is, that it is not contagious, but infectious and atmospheric."

6. *Plague-clothes sent to London!* What will the quarantine people say to this? Conceive the horror of the Cockneys if they had suspected what a trick was being played on them.

"Doctor Pruner of Cairo informed me, that he never knew an instance of plague to follow an autopsy, among the pupils of the hospital, and that they made post-mortem examinations of plague subjects, as freely as those who die from other diseases. Dr. ——— of Alexandria, stated to us, that he sent the clothes and matrass, of a person who had died of plague, to London, and that a quantity of the discharge from the charbons and buboes was mingled with them, and cotton was imbued with it purposely. It arrived safe, was taken home, but no disease communicated by it. His confidence in the non-contagiousness of plague was so great, that he was induced to make this bold and unjustifiable experiment."

We trust that Dr. Mott has regained the health he left the New World to seek.

DISLOCATION OF THE PATELLA OUTWARDS, WITH TORSION ON ITS AXIS. By JOHN WATSON, M.D.

The following case is contained in our esteemed contemporary, the New-York Journal of Medicine and Surgery, for October, 1839.

Case.—Henry Burton, a carman, of rather slender frame, and about thirty-five years of age, was on horseback in a crowd at the Park, August 21st, 1839, waiting to see the public reception of the Hon. Henry Clay. In the confusion of the crowd, another horseman backed his horse against him, and the animal's hip striking against Burton's right leg, injured him so severely that he was unable to say how, or in what direction he received the shock. He was carried immediately to a neighbouring hotel.

"I saw him soon after the accident, in connection with Dr. L. C. Ferris, Dr. Stearns of the northern part of the city, and Dr. Thomas F. Cock. The patient was complaining of severe pain; the leg was perfectly straight, but could be flexed about to an angle of 140 without increasing his suffering. The patella appeared to be slightly drawn up, and it was twisted upon its axis, presenting its outer edge, in a prominent hard line, in front of the knee: its inner edge was resting either in the groove between the condyles of the femur, upon which its posterior face should naturally play, or in the small indenture on the anterior face of the femur immediately above this groove. The anterior surface of the patella was turned inward, its posterior surface outward, and it rested nearly at right angles with its natural position. Its upper and lower attachments were both preserved, and could be distinctly felt; and a sort of band appeared to pass from its under, or, as it now lay, its outer face, inward to the deeper portion of the knee-joint. This band, as I conceived, was caused, either by the tension of the capsular ligament, or by the rupture of its edge, as it passes from the outer side of the patella. The position of the bone was so well marked that no one at all acquainted with the anatomy of the part, could mistake the nature of the accident.

With the leg extended, and the anterior muscles of the thigh forced downwards as much as possible, pressure was made upon the patella with the expectation of forcing down its prominent edge, and pushing the bone directly into its proper position. The effort was followed only by a severe increase of pain; the bone remained permanently fixed. Another attempt was made to cant its posterior edge inward, and to bring its anterior edge outward, without pressing it against the condyles of the femur, by forcing the head of a key against the posterior, now the outer face of the patella, (using this as a fulcrum,) and pressing the prominent edge of the bone towards the outer condyle. This manœuvre gave him no pain; but was as fruitless in its result as the other. At length the knee was forcibly bent, and immediately straightened again; and then, by canting the patella as before, and pushing it slightly downwards and inwards, it sprung, with a sudden snap, into its proper position. The reduction would, doubtless, have been facilitated by flexing the thigh strongly upon the pelvis. This, however, was not attempted, and the manipulation just described, answered every purpose.

As soon as the bone was replaced the pain ceased; and the patient thinking himself well again, stated that he could now walk as well as ever. A straight splint was applied behind the limb, so as to secure the joint, and the patient was sent home in a carriage, with directions to keep the knee at rest for a few days, and to apply to it an evaporating lotion.

After some observations on the imperfect notice of this accident, contained in works on surgery, Dr. Watson adds:—

"Though the position of the patella in this case was very different from that

which it occupies in the subluxation outwards, yet it is easy to see how the latter accident might be resolved into this. For the patella in slipping outward, while passing over the outer edge of the pulley of the femur, must, from the very shape of the bones, have its outer edge tilted forward, and its inner edge, in consequence, thrown a trifle backward. Now, whilst in this position, and before the patella is allowed to reach fairly to the anterior face of the condyle, a sudden contraction of the rectus and vasti muscles must tend to bring the bone back again within the line of their action: so that instead of slipping completely over the condyle, it will either fall back into its natural position; or its inner edge being arrested, and the bone being thus prevented from moving inwards bodily, its outer edge must be drawn forwards towards the axis of the limb, and the accident I have described will be thus produced."

This case adds another to the list of those in which flexion of the knee contributed towards the reduction.

MR. DONOVAN ON A NEW CHEMICAL COMBINATION OF ARSENIC, MERCURY, AND IODINE; AND ON ITS MEDICINAL EMPLOYMENT.*

"Triturate," says Mr. Donovan, "6.08 grains of finely levigated metallic arsenic, 15.38 grains of mercury, and 50 grains of iodine, with one drachm measure of alcohol, until the mass has become dry, and from being deep brown has become pale red. Pour on eight ounces of distilled water; and after trituration for a few moments, transfer the whole to a flask; add half a drachm of hydriodic acid, prepared by the acidification of two grains of iodine, and boil for a few moments. When the solution is cold, if there be any deficiency of the original eight ounces, make it up exactly to that measure with distilled water. Finally filter.

The theory of this process need scarcely be adverted to. By the long-continued trituration of arsenic, mercury, iodine, and alcohol, the metals are converted into iodides, which combine. The mass by solution in water is converted into an hydriodate of arsenic and mercury. The quantities of the two metals are so adjusted, that, when converted into protoxides by decomposition of a portion of the water in which they are dissolved, there will be eight grains of protoxide of arsenic, and sixteen of protoxide of mercury. The quantity of water is such that each drachm measure of the solution will contain exactly one-eighth of a grain of protoxide of arsenic, and one-fourth of a grain of protoxide of mercury. I conceive that the quantity of mercury ought to be double that of the arsenic, in order to insure a slow and moderate, yet adequate mercurial action, along with the proper effect of the arsenic.

Of this *liquor hydriodatis arsenici et hydrargyri*, each drachm measure consists of—

Water, one drachm.
Protoxide of arsenic, one-eighth of a grain.
Protoxide of mercury, one-fourth of a grain.
Iodine, (converted into hydriodic acid,) four-fifths of a grain.

The colour of the solution is yellow, with a pale tinge of green: its taste is slightly styptic. It cannot be properly conjoined with tincture of opium, or with sulphate, muriate, or acetate of morphia; for all these produce immediate and copious precipitates in it. Hence if opiates are to be used during the exhibition of this arsenico-mercurial liquor, they must be taken at different

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* Dub. Journ. Nov. 1839.

periods of the day. Tincture of ginger produces no bad effect. The following formula is proper:—

℞. Liquoris Hydriodatis Arsenici et Hydrargyri drachmas duas.
Aquæ Distillatæ uncias tres cum semisse.
Syrupi Zinziberis semunciam. Misce.
Divide in haustus quatuor. Sumatur unus mane nocteque.

Thus one-sixteenth of a grain of protoxide of arsenic, and one-fourth of a grain of protoxide of mercury, would be taken in each dose, along with two-fifths of a grain of iodine, which being in the state of combined hydriodic acid, will be much diminished in energy of medical effect. This is no doubt the proper dose to begin the exhibition of arsenic with; but it will be very soon necessary to increase it.

The division into draughts is here necessary: first, to insure accuracy of the dose, so essential in the case of this active medicine: and next, to prevent injury to the ingredients by the use of a metallic spoon as a measure—the general way in which, unfortunately, the dose of a medicine is determined."

Mr. Donovan recommends this in certain cases in which its ingredients have been found serviceable, and it deserves a trial.

CASE OF ANEURYSM, CURED BY THE NEEDLE.

This case is quoted by our valued contemporary, the Medical Examiner, of Philadelphia,* from the Southern Medical and Surgical Journal, for July. It occurred to Mr. C. P. Richardson, of Savannah, Georgia.

Case.—"A. B., an Irish labourer, called at my office on the 27th of January last, with a tumor the size of a pigeon's egg, two inches above the wrist; the arm was much swollen and tense; its temperature greatly elevated, and, as may be supposed, he was labouring under great constitutional disturbance. The tumor was aneurismal; produced by a wound of the radial artery, an inch below the aneurism. The history which he gave me of the case was, that in some fight, three weeks before, he had been stabbed. At the time the wound bled considerably, but was stopped without surgical aid, and as the wound readily healed, no more was thought about it. In about a week afterwards, his arm became swollen from the elbow to the wrist, and very painful. The tumour then became obvious at the place I have mentioned. Its gradual increase, with the pain and tumefaction of his arm, induced him, two weeks afterwards, to seek advice. When I first saw him, his arm was much swollen with the blood that had infiltered thoughout its whole cellular tissue; the heat and redness intense; his whole system participating in the irritation; and the aneurism tense and pulsating. It was at this time that I passed the needle horizontally through the tumour—using the precaution to arm the extremities of the needle with pieces of cork, that it might not escape or be caught by the roller with which I encircled the arm. Directions were then given to keep the arm constatly flexed—the bandage to be saturated with cold water—to take a large dose of salts, and to refrain from food. Previous to the passing of the needle, the pulsation of the tumor and the radial artery below the tumor, was distinctly felt. But shortly afterwards (ten minutes) the diastole of the artery was barely perceptible, whilst the pulsating of the tumour had altogether ceased. On the 30th,

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* July 20, 1839.

three days after the first dressing, the tumour was hard, and no impression could be made by pressure—the pulsation of the artery below the tumour was very plain—the pain, heat, and tumefaction of the arm had subsided, with no appearance of suppuration at the point at which the needle was introduced."

In a week, the coagula sloughed out, and the artery above the tumor, as far as could be ascertained, was obliterated. Two weeks perfected the cure, and the man was able to go to work. Had the needle been withdrawn three days after its introduction, or before any signs of suppuration had made their appearance, Mr. R. believes that no sloughing would have occurred.

If we are to judge by this case, the method must be hazardous.

Sloughing of a Brachial Aneurysm.*

Mr. Mackie, a surgeon of Cupar Fife, relates this case in our northern contemporary.

Case.—"Mr. W. G. of East Aytoun, near Scarborough, was bled in the median basilic about the 20th October, 1835, and unfortunately the point of the lancet penetrated the brachial artery. From the blood flowing *per saltum* it was apprehended that such was the case, and, in order to effect a cure, compression was employed, but without any effect, as in three weeks, a pulsating tumour, of the size of a hen's egg, had formed at the elbow, bearing the usual characteristics of aneurism.

In the course of another fortnight the surface of the swelling began to ulcerate, and in a week further, hemorrhage occasionally occurred, which so weakened and alarmed the patient, that he at last consented to submit to the operation of tying the brachial artery above the tumour, which, accordingly, was performed by me, in presence of Mr. Smart and Dr. Alexander, of Scarborough.

The operation was performed in the usual manner, by cutting down upon the artery along the inner margin of the biceps muscle. On tightening the ligature, the tumour almost instantly became flaccid, and pulsation at the wrist entirely ceased. The whole arm was then enveloped in new flannel, and an opiate exhibited, which soon had the effect of inducing tranquil sleep.

Mr. G. complained at first of an uneasy prickly feeling in the affected member, and the arm was rather cooler than the other. Sensation was in no wise affected. After reaction had commenced there was a good deal both of constitutional and of local irritation. The affected limb then became much hotter than the sound one, and general throbbing in the whole arm was then felt, synchronous with the pulsations of the heart, and, in about ten days, the pulse was indistinctly felt at the wrist. About this time also the whole aneurismal tumor sloughed away, leaving underneath a clear healthy surface, which rapidly healed. In a fortnight the ligature came away with the dressing, and in three weeks from the date of the operation, the patient had entirely recovered.

Three years afterwards, I had an opportunity of examining the arm, which was equally strong with the other, and the pulsations of either radial artery quite distinct."

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* Edinburgh Med. and Surg. Jour. July, 1839.

MISCELLANIES.

ITINERANT PHRENOLOGISTS.

Phrenology appears to be in danger from a bastard brood of her own, who ape the mountebank's trade, and sell characters in the most approved fortune-telling fashion. These gentry have quitted the lines upon the palm, and have taken to the bumps upon the head. What sort of market they are making of them let the Phrenological Journal tell.

"Their advertisements of advice and manipulation are now frequently seen in the London papers: and some of them make a regular (or rather an irregular) profession of itinerating from town to town to sell manipulations. These latter usually premise a course of phrenological lectures, 'first lecture gratis,' to advertise their skill and custom. They also procure eulogistic paragraphs in the newspapers read in the place, by disbursement of a proportionate share of the profits of their trade, which easily procures for them these paragraphs to any extent of eulogy. A host of persons have their curiosity aroused by these arts, and make haste to purchase the advice and manipulations of the phrenological mountebank. Each who gets his own head manipulated is certain to carry his paper-voucher to some of his acquaintances, and to recommend them to follow his example. Herein lies the 'whole art and mystery' of the profession. People must be pleased, and must be made to talk and recommend. The ready method of insuring these results, is to seize a few salient points of character, clearly shown on the head, which is an easy enough task to any one having only a very slight knowledge of Phrenology: and the rest of the sketch is filled up with flatteries, or is penned in terms of sufficient ambiguity for admitting of a construction acceptable to the vanity and self-pride of the party manipulated. The acquaintances of the poor egotist laugh in their sleeve at his credulous vanity, but of course gratify him by declaring the portrait to be a wonderful likeness, and he is fully and instantly convinced of 'the truth of Phrenology;' becoming also an especial trumpeter of the skill of the manipulator. This creditable mode of earning a living out of the ignorance and vanity of others is not confined to the male sex. We have seen advertisements of lectures on Phrenology by 'ladies,' who also manipulate, and give advice to young men touching marriage and other interesting subjects."

Of course, there cannot be a doubt that this sort of humbug is injurious to phrenology. It may cause the unthinking to laugh, but, amongst phrenologists, it cannot but make "the judicious grieve." The *practice* of phrenology is fraught with danger, and requires the greatest circumspection. If ignorant and unprincipled quacks make it an engine of downright imposture, all that is philosophical in it will be damaged in the world's esteem.

The editor of the Phrenological Journal goes on to say:—

"But the art is itself too profitable to be suppressed by the discountenance of the superior phrenologists. They might as well attempt to stop the sale of quack medicines, as to suppress the sale of phrenological flatteries. They may refuse to countenance or encourage itinerant dealers, which of course all reputable phrenologists will do; but the ignorant and the joke-loving, the credulous and the curious, will still flock to the mountebanks; and thus the disadvantages will continue to the uttermost, without the counterbalancing advantages. To ensure the latter, we think it would be expedient for the superior phrenologists to abstain from denouncing the custom *in toto*; since the more it is condemned by them, the lower will be the grade of those who do follow it; by wholesale condemnation, it will be forced downwards instead of upwards. But

if it must and will be followed, of which we think there can be no doubt, it were better raised to dignity than depressed into degradation.

Who, then, should be the parties encouraged to practise the art? The subject is not yet sufficiently advanced, to constitute a profession by itself; though a succeeding generation may expect to see this done. Of the professions now followed, Phrenology is clearly the most intimately connected with that of medicine; and to the medical profession accordingly we should gladly see it resigned. Their professional education, their habits of life, and the friendly intimacy so frequently subsisting between families and their medical advisers, are all in favour of this; and if a few personally respectable and *settled* medical practitioners would allow themselves to be consulted phrenologically as well as medically, the chief objections to the custom would speedily disappear, and all the more intelligent and respectable portion of the public would learn to see the quacks and itinerants in their true colours. We now speak of the medical profession collectively; many individuals of it would prove incompetent to practise Phrenology, through lack of general attainments."

We are afraid that these manipulators will make phrenology look foolish.

A great Operator and his Operations.*

The following is a sketch of a great operator on the Continent. It is evidently from the life.

"On June 26th last, I paid a visit to his clinical hospital, and saw him for the first time. He is somewhat above the middle height, and has a fine muscular development, especially of the arm and leg, to which he probably owes much of his dexterity. His crown is bald, hair inclining to grey, nose Roman, and whiskers worn across the cheek. He came into the theatre to perform two operations, dressed in a short linen jacket, reaching not quite to the hips, and with sleeves terminating above the elbow; the forearm was bare, and he had an oil-cloth apron tied round him."

This gentleman, something between an hostler and a knacker, was the celebrated Langenbeck. The amputation he performed was done thus:—

"The patient was a youth, with scrofulous disease of the knee-joint. The preparations for the operation were exceedingly simple. Two basins with water and sponges on the floor; a few ligatures in the hand of one assistant, a saw, and three or four pairs of Amussat's and the common forceps, in the hands of others; a case of scalpels, and a case containing two amputating knives on a little side-table. The simplicity of the apparatus contrasted strongly with the pails and saw-dust, and glittering array of knives and scissors, and scalpels in extended file, flanked by tourniquets, bandages, strips of plaster, piles of rag, &c. witnessed in some English hospitals. The knife which Langenbeck uses is supposed to be peculiar to him, and in consequence has received his name; but its prototype may be seen in the hands of any butcher in England, being a short knife, rounded at the point. The blade and handle are each about four inches long; the former about 5-8ths in breadth. The artery being compressed by an assistant, Langenbeck took the knife just described in his hand, stepped back two steps—stood in a theatrical attitude, with the knife elevated above his head; then darted upon his patient, and made a deep gash on the outer part of the lower third of the thigh, cutting half away through to the bone: the knife describing a slight curve downwards and backwards; another application of the knife, slanting upwards, reached the bone. The same method was followed on the

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* Med. Gaz. Aug. 24, 1839.

opposite side. The knife was then made to describe one or two turns round the bone; was changed for the saw; the muscles were retracted by the hand, and in about one minute from the commencement of the operation the limb was severed. The artery was sufficiently compressed to prevent a jet, but not enough to secure the patient from the loss of more blood than he ought to have suffered, considering his age and great debility. After tying the arteries, the thigh was rolled, and the face of the stump slightly covered with a piece of rag. The patient was then taken to his bed, and rag, wet with cold water, applied. In an hour or two, the lips of the flap were united by four or five sutures. Next day I found the roller removed, and nothing upon the stump except a strip of wet paper along the line of union. This mode of water-dressing has been practised by Professor Langenbeck for about thirty years. It is not so good as Liston's, because there is nothing to prevent the paper drying. To remedy this, a painter's brush and a basin of water stand close to the patient's bed, that the paper may be moistened from time to time."

Here are some of the faults and all the advantages of a Continental operation. The disregard of the loss of blood, and the theatrical display are unquestionably faults—the simplicity, boldness, celerity, and dexterity as unquestionably advantages. Of the dexterity it may be said, as Gibbon said of personal beauty, that those who despise, are those who have not got it.

A Clinique.—"Next came a boy with a tumor in the upper part of the thigh. It was a doubtful case, and there was a long inquisition upon it. It is well known, that in the German cliniques there is a student in charge of each patient, who is examined by the professor, respecting the case, in the presence of the class. The questions put are those suggested by the anatomical and physiological relations of the part affected; and the professor rectifies, explains, or illustrates, the answers: in doing which, Langenbeck mingles a little wit, a good deal of theatrical gesticulation, and a good deal of extraneous matter, with much useful information. The wit, gesticulation, and foreign matter, are far from being useless, as they serve to impress the case upon the memory of the students, by exciting and keeping up their attention. Indeed, nothing is more dull and soporiferous than one of these cliniques conducted with legitimate professional gravity. Langenbeck is generally censured for his declamatory and showy manner, in which he strongly resembles Lisfranc: but he is in the right."

We believe that it will be admitted that the mass of medical students are not philosophers. The most effective lecturers and most successful teachers have found, we fancy, that a little *piquance* is necessary to make the dull matter go down. Science is well for the scientific, but the young gentlemen of a class like a little dash of fun in it. And provided that the science is not lost, the fun is not so reprehensible.

FRIGHTFUL STATE OF THE CLERGY.

The passage we are about to quote is really alarming. The Church *is* in danger now. We would advise all parsons of the good old style to beware of their evangelical brothers. Better stick to the "jolly full bottle," than join the snivelling tea-totallers.

It appears that in New England the clergy are in such a strait, that they have set a new quinsy a going. This is called the "*clergyman's sore-throat*," and is distressingly prevalent. A writer in the Boston Journal gives a harrowing account of the cloth.

"Half a century ago, most of our clergymen laboured some, particularly in the time of getting hay. Nearly all made their gardens and cut their wood; and several of them did considerable towards cultivating their own small farms. Their parochial duties were comparatively light; they seldom preaching more

than two sermons a week; and from the composition of these they were frequently relieved by exchanges about once a month, or oftener during Summer. Most of them smoked tobacco, and some of them chewed. I recollect but one old minister who took snuff. They all drank cider daily, and when fatigued, generally took some flip or toddy. Very few of them, if any, however, were in the habit of drinking ardent spirit daily. That refreshing drink, small beer, made from malt, was considered nearly as necessary as bread in a family. Thus they frequently led very quiet and regular lives, without being exposed to intense excitement of mind, or over-fatigue of body. On the whole, they were probably as healthy, and lived as long, as most other classes of the community. My own father lacked only about two months of being eighty-eight years old, when he died.

Within the last twenty years, it would seem that clergymen, in about equal proportions, in our different denominations, have been breaking down by scores, and more particularly as respects their voice. I have been more familiar with these cases among the Methodists, Episcopalians, and Congregationalists, though I presume there is a proportional number among the Baptists.

There have been some very striking changes in the condition of most of the clergy in New England since the commencement of the present century. In the first place, their duties are much increased, public opinion requiring of them, in most places, much greater exertions than their predecessors commonly made. The religious meetings, benevolent associations, societies for promoting various objects, and new organizations of almost every description, are, perhaps, ten times as numerous as they were forty years ago. To say that four times as many sermons and addresses are now delivered before a given population, as was formerly the case, would be an estimate, probably, much below the fact. Besides these additional labours, the habits and manner of living of very many clergymen, are essentially changed. Few now have either leisure or land to enable them to attend to agriculture, Most of them have renounced tobacco. When they are fatigued, the slow process of self-restoration is adopted, instead of the expedient of more suddenly reviving the exhausted powers of the system, by the diffusible stimuli. Alcohol in all its forms is proscribed. Few use wine, and most even dispense with cider. Many families have dropped the use of coffee, some of tea, and a considerable number have materially lessened the quantity of animal food. Malt beer, that ancient, harmless beverage, is scarcely known."

We have decidedly no fancy for New England. Think of undergoing eight sermons a week, and trusting to the " slow process of self-restoration" for a recovery! No constitution could stand it.

Seriously, is it not something worse than laughable to see what religious enthusiasm leads to? It breaks down the body, wears out the mind, and affecting to render men wiser, happier, and better, it proscribes the bounties of Nature, and denounces that disposition to innocent enjoyment which a benevolent Creator has blessed us with. And what are the consequences? Physical infirmity, mental delusion, the gloomy home, the fanatic meeting, the bed of sickness, and the madhouse.

DISLOCATION OF THE HEAD OF THE RADIUS BACKWARDS.

SIR, Andover, Oct. 20th, 1839.

My attention has recently been called to the details of a case, in the 30th Vol. of the Medico-Chirurgical Review, of Dislocation of the Head of the Radius backward; which is justly commented upon as being exceedingly uncommon.

As every mite of information becomes valuable when disseminated in associa-

tion with facts of the same class, I am induced to trouble you with the following similar case which came under my care some time since.

On the 10th of September, 1838, I was met (at some distance from the town), by a boy about twelve years of age, who requested me to examine his left arm, which he said he thought was broken in a fall.

Upon doing so I found the head of the radius projecting backwards, and so fixed as to render the fore-arm nearly motionless. Having no one to assist me; by grasping the elbow with the left hand, pressing with the fingers firmly upon the head of the displaced bone, and, with the right firmly and steadily supinating the hand, making at the same time moderate extension, the dislocation was immediately and easily reduced. The accident was followed by but little inflammation, which readily subsided in the course of a few days, by the use of evaporating lotions, &c

The reduction in this case was, no doubt, the more readily effected, in consequence of the youth of the patient, and the shortness of the time which had elapsed since the accident, being not more than a few minutes.

I am, Sir,

Your obedient servant,

OCTAVIUS HAMMOND.

To the Editor of the
Medico-Chirurgical Review.

SUPPLY OF SUBJECTS FOR DISSECTION.

He must be a facetious man who can talk of the present supply of subjects. It is an algebraical quantity—something minus nothing. The Anatomical Bill has worked, or has been worked charmingly. Each year since its introduction the number of subjects has decreased, until it has reached what we may hope to be a minimum.

The Inspector of Anatomy has been for some time a procurator of bodies, and a distributor of them. For this he is paid pretty handsomely. What have been the fruits of his procuratorship, let the present dearth testify—what the consequences of his distributorship, it is not so easy to divine. The system is radically bad which gives him either office. A government functionary is the worst person in the world to send to a parish board. He wears the odious garb of authority, and parish patriotism is in arms against him. If this be true of government functionaries in general, how true it must be of the existing one in particular. The universally expressed opinion of the teachers, their vote of censure, the representations to the Home-office, and the fruits of Dr. Somerville's labours, speak a language which cannot be misunderstood, and ought not to be disregarded by the government. Let the Inspector be what the Act intended—an inspector and no more. Dr. Somerville must be squeezed to his original proportions.

The business has become so tangled that it is difficult to know what to do. But the best plan is to appoint the College of Surgeons to the post of obtaining and of distributing bodies. It is a farce to talk of the teachers managing that matter themselves. They have tried and failed. Then who are to do it? We know of none so adapted to the office as the Council of the College. Some parties affect to dread abuse and jobbing. But we would observe that jobbing and abuses and intrigues may be found amongst anatomical teachers, as well as in the College, and publicity is the great safeguard against them any where. Let every thing be done in the most open manner, let every check be adopted against unfairness, and we do not fear the experiment of resorting to the College.

The evil is a crying one. The pupils of the London School have a right to

demand the adoption of a remedy. If the malcontents towards the proposed one have a better in their pockets let them bring it out. If they have not, let the students be informed who it is that stands in the way of a supply. If there is not soon a change for the better we shall lay the whole case before our readers and probe its evils to the bottom.

New Regulations of the College of Surgeons.

The palmy days of the London Schools are gone. The competition between themselves, and the growing consequence of the Provincial Schools have already affected the classes, and will affect them more,—

> Which Hebrew priests the more unkindly brook,
> Because the fleece accompanies the flock.

The new Regulations of the College will probably set the seal to the destruction of the private schools, and to the damage of the hospital schools. Not but what the College have been right. It would have been suicidal on its part to hold out against the widely expressed and still more widely felt desire of the Provincial surgeons. Whether the result will be advantageous to the science we will not venture to predict. Whatever renders teaching less profitable will withdraw the best men from it. So far, the result will not be advantageous—but the pupils *may* gain in morals, and *will* gain in purse. How far the latter will operate for the benefit of the profession, let those who already complain of its being overstocked tell us. For our own part we do not hesitate to say that any regulation which operates as a bonus on the entrance of members into the profession, is an evil, and will be felt one.

Regulations of the Council respecting the professional education of candidates for the diploma.

I. Candidates will be required, in addition to a Certificate of being not less than twenty-one years of age, to bring proof—

1. Of having been engaged in the acquirement of professional knowledge during a period of not less than four years; six months of which shall have been occupied in the study of Practical Pharmacy, six months by attendance on the practice of physic, and the remainder of the period on the practice of surgery, at a recognised hospital or hospitals in the united kingdom:—three months being allowed for a vacation in each year.
2. Of having studied anatomy and physiology, by attendance on lectures and demonstrations, and by dissections, during three anatomical seasons or sessions;*—and of having attended at least two courses of lectures on the principles and practice of surgery, delivered in two distinct periods or seasons, each course comprising not less than 70 lectures:—And one course of not fewer than 70 lectures on each of the following subjects, viz. the practice of physic—chemistry—materia medica—and midwifery, with practical instructions:

II. Members and licentiates in surgery of any legally constituted college of

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* An anatomical season is understood to extend from October to April inclusive, and to comprise at least 140 lectures on anatomy and physiology, occupying not less than one hour each, given on separate days; and at least 100 demonstrations of the like duration, given in a similar manner; exclusive of dissections of which distinct certificates are required.

surgeons in the united kingdom, and graduates in surgery of any university requiring residence to obtain degrees, will be admitted for examination on producing their diploma, license, or degree, together with proofs of being 21 years of age, and of having been occupied at least four years in the acquirement of professional knowledge.

III. Graduates in medicine of any legally constituted college or university requiring residence to obtain degrees, will be admitted for examination, on adducing, together with their diploma or degree, proof of having completed the anatomical and surgical education required by the foregoing regulations.

IV. Certificates will not be recognised from any hospital unless the surgeons thereto be one of the legally constituted colleges of surgeons in the united kingdom: nor from any school of medicine or midwifery, unless the respective teachers be members of some legally constituted college of physicians or surgeons in the united kingdom, nor from any school of anatomy or surgery in England, unless the respective teachers be members of some legally constituted college of physicians or surgeons in the united kingdom, and have undergone a second or special examination on those branches of science, according to the ordinances of this college relating thereto.

V. Certificates will not be received on more than one branch of science from one and the same lecturer; but anatomy and physiology—demonstrations and dissections—will be respectively considered as one branch of science.

N. B. In the certificates of attendance on hospital practice and on lectures, it is required that the dates of commencement and termination may be inserted in words at length.

Blank forms of the required certificates may be obtained on application to the Secretary, to whom they must be delivered, properly filled up, ten days before the candidate can be admitted to examination: and all such certificates are retained at the college.

By order of the council,
EDMOND BELFOUR, *Sec.*

August 20th, 1839.

EXTRA-LIMITES.

AN INTRODUCTORY LECTURE,

DELIVERED TO THE

ANATOMICAL CLASS

OF

SAINT GEORGE'S HOSPITAL,

IN THE

THEATRE IN KINNERTON STREET,

On the 1st of October, 1839.

By HENRY JAMES JOHNSON.*

You have heard, Gentlemen, from your able Lecturer on Surgery, the nature and the objects of your science. The Temple of Medicine has been built up before you, and you have seen that, in its various halls, as various lessons will be taught. Within this Theatre, the delight, or labour, of study has commenced, and its primary facts, its elementary characters will shortly be displayed before you.

* Perhaps an apology is necessary for printing so flimsy a sketch of the History of Anatomy as this. But some of the friends, and several of the pupils who honoured me with their presence at the delivery of the Lecture, having intimated a desire for its publication, I have complied with their flattering, and I fear, their partial wish. My only hope is, that the same indulgence which overlooked its faults at the Theatre, may wait upon it in the press.

Censoriousness may possibly be disarmed by the admission, that the Author makes no pretension to the character of a historian. He merely aims at conveying a general idea of the progress of Anatomical Science, and exhibiting the principal phases of its growth. Those who are accustomed to listen to *introductory* lectures, or to *give* them, will confess that recondite speculations would be out of place, and will make most allowance for the defects which must be obvious in the present. My *readers* will be pleased to find that the Lecture has been compressed to its actual small proportions; my *hearers* will, perhaps, complain, that an equal kindness was not shewn to them.

Here you are to investigate the materials you are made of—the office of each organ—the attributes of every fibre—their subtle combinations—their admirable harmonies. Here you are to take the composite machine—to dissect—to analyse it—and to solve, or try to solve, the difficult physical, impossible moral problem—to know yourselves.

To a reflecting being, his own material constitution must, from the first, have been a subject of interest. But, in the earlier ages, superstition blindly, yet humanely, opposing the ferocious spirit of the times, fenced in with a false sanctity the bodies of the deceased. Denied the rites of sepulture, the unhappy ghost wandered around the spot where his dishonoured corse had lain, barred alike the privileges of the living *and* the dead.

At such an epoch, human dissections would draw down the vengeance of gods and men. Diseases were inflicted, and their cure must be effected by the Deity—his servant was the priest—the priest was the physician. Thirty-five centuries were already gone by, when Darius, the son of Hydaspes, received a simple luxation of the foot. He travelled to consult the skill of Egypt, renowned in art, at her acmé of refinement, the cradle of the sciences and gods of Greece. In the land of Apis, the deified discoverer of medicine, the dislocation of Darius was neither reduced nor understood.

Thirsting for a knowledge of the composition of animals, Pythagoras roamed over the known world. His pupil Empedocles treasured the doctrines of his master, and instructed his hearers in anatomy. He taught with confidence that "two parts of water, one of fire, and as much of earth," were the simple ingredients of the nerves, whose extremities, cooled and hardened by the air, formed, of course, the nails!

The first great revolution in medicine was at hand, for, after the lapse of a few olympiads, Hippocrates observed and wrote. The gods were the source of disease no more—the priests and the oracles ceased to prescribe—

> No voice, nor hideous hum
> Sounds thro' the arched roof, with strains deceiving;
> Apollo, from his shrine,
> Can no more divine,
> With hollow shriek, the steep of Delphos leaving.

Bacon was anticipated, for induction was applied to physic—and the genius of Hippocrates stamped it a science. You would naturally hope that the "Father of Medicine" was also an anatomist. He suspended, indeed, a skeleton of brass in the Temple of Delphi, a present to posterity and to the god. But a knowledge of the bones may be attained without dissection—it is certain that Hippocrates confounded the tendons and the nerves—and his physiological information may be guessed from the following sample:—The brain, he tells us, is a large sponge, whose appropriate office is to soak up the pituita, which distils, in chilly weather, from the nose!

Another century gave birth to a great captain, and to a greater man—to Alexander and to Aristotle. The soldier supplied the purse of the

philosopher, and 200,000*l*, and innumerable agents procured for him animals from every clime.

Of the Stagyrite, it might be said, in no sarcastic sense: —

Schœnobates, augur, medicus, magus, omnia novit.

His lessons have survived the admiration or neglect of ages, and are singularly fortified by modern zoology. But the power of his master failed, perhaps, to obtain for him the dissection of a single felon; for, Aristotle informs us that the nerves and the ligaments spring from the heart—that the brain is a mass of earth and water, without blood and without sensation—and that its only office is to balance and moderate the fire in the bosom!

Among the generals of Alexander, learning will ever honour Ptolemy Soter. We cannot feel surprise that the man who had listened to Aristotle, should found the Alexandrian Library. But the library was itself attached to the Musæum, and that was adorned by Herophilus. His name should be embalmed in the memory of anatomists, for he was the originator of human dissections. The popular hatred then, as since, pursued the benefactor of his species, and Herophilus was branded by terror and fanaticism with the guilt of dissecting six hundred criminals alive. The accusation, though launched by a Father of the Church, may be safely discredited by us, who remember that Medea, the inventor of warm baths, was reproached with boiling her patients in a cauldron. Among the merits of Herophilus, the discovery of the nerves was not the least. Modern description still appeals to him—and such was the enthusiasm of an earlier age, that Fallopius laid it down as a certain maxim—that, to contradict Herophilus on a question of anatomy was as impious as to contradict the Gospel!

They who have read the page of history but carelessly, may suppose that since dissections were begun, the progress of anatomy was rapid. But it shared the fate of philosophy, and drooped amid the mushroom crop of empirics and of sophists that sprang from the ruins of liberty and of the schools The shadow of the Roman eagle overspread the earth, and science withered beneath its wing.

The severe investigations of Herophilus were shunned,—his memory was oppressed by ignorance and calumny—and religion prescribed laws to physiology once more. The Polytheism of Italy adored Ossipaga, the Goddess who regulated the growth of bones—and Carna, whose peculiar care was the bowels. Her most acceptable offerings were bean broth and bacon—the beau idéal of wholesomeness in ancient diet—the holiday fare of a Roman God.

The wheel of fortune had performed its revolution—superstition again darkened its zenith—anatomy was once more dishonored and denounced—and Asclepiades taught the compendious doctrine, that the structure, both of the body and the soul, consisted wholly of invisible particles and imperceptible pores!

But the reign of Trajan brought other blessings, as well as victory, and the conqueror of Dacia was the master of Galen. By a singular felicity, the restorer of anatomy flourished under three of the best of the Cæsars,

and his labours were prosecuted amidst the repose which crowned the virtues of the Antonines.

Those labours were far from trivial. In the books of "Anatomical Administrations" which have been saved, may be discerned the germ of the modern discoveries in the functions of the nerves. I cannot resist one brief quotation, shewing, as it does, the influence of anatomical studies on a cultivated mind. The Pagan dissector breaks into this passionate address to Jove:—

"In writing these books, I compose a true and real hymn to that awful Being who made us all. And, in my opinion, true religion consists, not so much in costly sacrifices and fragrant perfumes offered on His altars, as in a thorough conviction in our own minds, and an endeavor to produce a similar conviction in the minds of others, of His unerring wisdom, His resistless power, and His all-pervading goodness."

However lax the discipline of Rome—however sunk the majesty of Jove—the infidelity of her philosophers (if she could be said to possess philosophy) was unable to vanquish the prejudices of paganism, fortified by the natural feelings of humanity. Even Galen, the great anatomist of antiquity, apologises for dissections of men, and points to accidents of time and war, as affording blameless opportunities. Where slavery prevailed in its most hideous form, where the Gladiators' schools, and the shambles of the amphitheatre exhibited their thousands—

"Butchered to make a Roman Holiday,"

the scalpel was seldom and stealthily used. Galen directs the student of anatomy to repair to Alexandria for the study of the skeleton—to visit the sepulchre, where bones may lie exposed—and to profit by the labours of the vultures on the bodies of executed malefactors.

I linger on the page of Galen, for scarcely had the urn received his ashes, when the volume of anatomical discovery was shut for thirteen centuries. The barbarians poured their swarms upon the empire—its mercenary bands turned their swords against each other—and the struggle between christianity and paganism ended in the growth of the papal power. Its pretensions were incompatible with reason and reason was proscribed. What the sophists had begun the priests concluded—the disputatious dogmatism of the schools was supplanted by the cruel dogmatism of the cloister—and a black and bloody superstition scowled upon the Christian West.

If the Church monopolised the little learning of the times, and preserved the embers of science from expiring, it was not for the love of knowledge, but for the liking of its profits. Men's intellects, darkened by ignorance, were dazzled and easily ruled by the priesthood, and it appropriated, as natural rights, the professions of physic and of law. How law was debased, let history tell—the degradation of physic was soon complete.—Anatomy was almost held accursed, and the little that was taught or known was known and taught upon tradition. Medicine was a thing of herbs and charms—and surgery was consigned to the menials of the monastery, for the priest might draw no blood.

The Patriarchs of Constantinople envied, but could not rival the Bishops

of Rome, and a faint image of liberty reigned in the schools of the East. Yet the subtle genius of the Greeks was averse from simple observation, and words, not things, were the subjects of their speculations. The sects were equal in number to the teachers,—the corrupted text of Galen the idola specus to which they bowed—and the only point on which all agreed, was *not* to study nature. Need I say that anatomy languished?

In the gloom of the seventh century, Mahomet raised the standard of the crescent, and, in less than thirty years the Koran and the small-pox prevailed from Mecca to Gibraltar. The sack of Alexandria by the Caliph Omar scattered its manuscript treasures, and the sons of Ishmael read, for the first time, the aphorisms of Hippocrates. The lapse of six hundred years and the virulence of a bishop maligned the Caliph's memory with the burning of the great library, because, "if it contained what the Koran did not, it was impious—and if it held only what the Koran did, it was unnecessary." Yet Mahomet, himself, was an empirical physician, and the liberal spirit of the Saracens refuted the malicious libel.

While Learning was banished from the West, she was harboured by those generous barbarians. The mind, however, of the Asiatics is more lively than solid, and has proved too imaginative to succeed in natural science. They admired, and imitated the speculative Greeks, and transcribed and glossed each ancient author. Rhazes and Avicenna, the Galens of their day, and long the worshipped luminaries of Europe contributed a little to medicine and to surgery—to anatomy next to nothing.

It was among the Saracens, that Alchemy arose. Ordinary phenomena appeared unworthy the notice of philosophy, and the marvellous alone was deemed a fit object of pursuit. But chemistry was rocked in the cradle of delusion, and this powerful agent of human improvement had its birth in fraud and folly. The key was found to the casket of nature, and Roger Bacon was the first to lift the lid. The efforts of bigotry and interest never after closed it, and the giant form of knowledge slowly issued, like the genius from the box of the Arab fisherman, till it stood before the world in all its majesty.

Great as have been the services of chemistry to medicine, it lent no immediate impulse to anatomy. Basil Valentine, however, and even Paracelsus, directed men's minds to the study of Nature, broke the bonds of authority and the dogmas of the schools, and laid open the new world of philosophical discovery, which adventurous observation might make its own.

The fifteenth century is conspicuous in the annals of our race. The art of printing gave immortality to knowledge, and the reformation struck the chains of superstition from the soul. The work which Roger Bacon had begun was carried on by Luther, and the reason, to which religious disputants appealed, was sharpened for the investigations of science. They were keenly followed, and the succeeding age saw bolder strides in anatomy and physiology than the fifty-six centuries that had gone before. Dissections were now notoriously practised—individual facts were observed and promulgated—and the agitation in the world of anatomy boded the coming revolution.

In the year 1531, a Spanish physician, by name Servetus, used these remarkable words:—

"The passage of the blood from the right to the left ventricle does not take place across the middle septum, as persons have generally imagined; it depends on a more singular structure. In the long winding of the lungs this subtle blood is agitated and prepared by the action of the viscus, and gains a yellow colour. From the pulmonary artery it passes into the pulmonary veins, where it becomes mingled with the air that has entered the lungs, and loses its fuliginous excrements. Lastly, it enters the left ventricle, which attracts it in its diastole."

The problem of the circulation was almost solved, reason alone might have worked it out, and we wonder how it escaped discovery. Yet seventy years separated Servetus from Harvey, and that long period was adorned by the talents and enriched by the observations of Vesalius, and Columbus, Eustachius, Varolius, and Ingrassias.

The story of Vesalius is so tragical as to claim a passing notice. A native of Brussels, he rose to be chief physician to Charles the Fifth, and to Philip the Second, his bigot son. His love of anatomy knew no bounds, and he was denounced by the priests and the Galenists as the dissector of a living person. The Inquisition was induced by Philip to spare his life, but condemned him to a pilgrimage to the Holy Land. The Senate of Venice invited his return to the professor's chair in Padua, but the anatomist was shipwrecked on the Isle of Zante, and perished miserably of cold and hunger. Vesalius, Roger Bacon, Galileo, paid, in their turns, the penalty of a genius that outran it's age, and sank under the iron arm of jealous superstition.

The plates of Vesalius are admirable for the period, and his descriptions generally accurate and elegant. A later anatomist (his name escapes me) on finding that some parts did not quite coincide with Vesalius' account of them, explained the contradiction by the ingenious remark, that "the structure of the body must certainly have changed since Vesalius wrote."

In 1563, Fabricius was appointed to that chair of Padua, which the unhappy Vesalius had been called to fill. His eloquence attracted students from all parts of Europe, and a young Englishman eagerly gazed, as he demonstrated the valves of the veins. The lesson was never forgotten —reflection suggested, experiment confirmed the brilliant conclusion —the secret of ages was finally disclosed—and the name of Harvey is imperishably linked with the immortal doctrine of the circulation of the blood.

Before the student of the present day has completed one course of anatomical lectures, he wonders at the dulness or perversity of intellect, which could fail to recognise so obvious a truth. He can scarcely be convinced that men of deep research and of powerful minds could seriously believe, in opposition to the evidence of sense, that the arteries contained only vital spirits—that the liver was the centre of the venous system—and that the blood went out in the veins by day and returned again by night. Yet such was their conviction, and it teaches us a truth which we never should lose sight of—how imperfect and how little trust-worthy the strongest faculties are.

The "circulation of the blood" was like the fulcrum that Archimedes sighed for. From it the world of physiology was stirred. The ancient

hypotheses were shivered in the dust, and, in their place, uprose in natural order, the facts of modern observation.

The success of Harvey, like that of Columbus, tempted thousands to embark on the ocean of discovery, and the inductive method, the gift of Bacon, supplied them with the compass. The followers of the physiologist, as of the navigator, oppress by their numbers and their merits, and I am constrained to dwell upon those alone whose names are signalised by epochs.

Bologna and the Hague were adorned at the same time by Malpighi and by Ruysch. The doctrines of the Italian on the composition of the glands, though resting on the powers of the microscope, submitted to the superior fortune and wonderful injections of his rival. The latter was indebted to De Graaf and Swammerdam for the art which rendered him so famous, and which, since his time, has done such good service to anatomy. But much of his success was probably fallacious—other methods of investigation have corrected the defects and errors of injection —and the present day has made tardy atonement to the greater accuracy of Malpighi.

Injustice, even, would blush to pass Haller by. Of great capacity, of untiring industry, devoting himself with equal ardour and good fortune to classics and to botany, to poetry and to anatomy, Germany regards him as a modulator of her tongue, medicine reveres him as the first of physiologists. To his golden volumes, the preceptor and the pupil may still go back, and both will reap instruction from their philosophic spirit of experiment and reasoning.

A young man attracted the notice of Dessault by his lively talent and precocious knowledge. The surgeon of the Hôtel Dieu had discovered, his generosity fostered the brilliant, the imaginative Bichât. His was the soul that

"Frets the pigmy body to decay,"

for at the age of 31, he was lost to science and his country. Short as was his career, it endured long enough to revolutionise medicine. He conceived, or borrowed, the felicitous idea, that the different textures which compose the body have special laws of health and of disease, and general anatomy started almost perfect from his hands.

The structure and the functions of the human body had been hitherto almost exclusively studied. If Aristotle examined the composition of animals, he was encumbered by a false philosophy, and he had not the assistance of those great discoveries which I have feebly sketched. But the time was come for extending the inductive method to the anatomy of all creatures, and Cuvier and Hunter made themselves imperishable names.

On Hunter, it would be idle in me to dwell. His museum may be daily visited by all, and beneath his bust might fitly be inscribed the epitaph on Wren:—

"Si velis monumentum, circumspice."

His writings, alas, are an imperfect record of what he knew and of what he did; and when time has corroded, as, in spite of our solicitude, it must, the great conceptions realised in the museum, posterity will question the justice of our admiration. The learning he despised is already taking vengance on his memory, and has wreathed her choicest laurels for his rival's brow.

The glowing page of Cuvier contrasts with the obscure and frigid style of Hunter. Its happy periods grace its noble images, and the inspirations of genius wear their most enchanting form. The minute details are only surpassed by the splendid generalizations, and both are tinctured by that sound philosophy, too frequently forgot by the lively temper of his country.

From the anatomy of animals to their physiology cannot be considered a step. The dissections of Cuvier and Hunter produced, ex necessitate, the researches of St. Hilaire, Blainville, Tiedemann, and Müller. Man is no longer, in the eye of the anatomist, that microcosm, ignorance and vanity supposed him. In structure and in functions he forms a step in the great natural ladder, and neither his position nor his office is intelligible by looking solely at himself.

His composite organism is made up of parts, some more, some less developed in him, than in beings lower in the scale, and problems of its nature and its properties find their analogical or direct solution in some other animals. Human physiology can no longer be studied, nor understood apart; but merged in general or comparative physiology, it takes a wider range, asserts a bolder aim, and submits the whole organic world to its calculus.

A review of the progress of anatomy will shew that it has shared the fortunes of the other great departments of philosophy. Feeble amidst the ignorance of early times—repressed by a timid, and prostituted to its purposes by a base bigotry—lost in the darkness of the middle ages—it revived with learning's revival. Yet through all reverses, it contained within itself the elements of triumph, because the elements of truth, and sprang up most vigorous when destruction was most imminent. So certain it is that the battle of science, like that of freedom,

> once begun,
> Bequeathed, like it, from sire to son,
> Though baffled oft, is ever won.

I need scarcely advert to the spirit with which anatomy is to be studied. We must bring to it that ingenuous temper of mind, which natural science demands, and which Harvey, and Haller, and Cuvier, and Hunter brought. A temper of mind, whose generous aim is philosophic truth, which it seeks at any cost of consecrated authority, of cherished belief, and of those allurements of hypothesis, which are so seductive to us all.

To divest itself of every prejudice, whether of opinion or the senses, and to accept all conclusions, however startling, and however repugnant, which follow legitimately from data well-observed, is its constant object and its great prerogative. And those amongst you who pursue such noble ends by such worthy means will reap, I cannot doubt, the rich rewards of

discovery and fame, for the volume of nature has been far from read, and many a bright page is yet to be scanned by her ripe and diligent student.

Your fatigue, gentlemen, is evidence how unworthy I have proved myself of the task I undertook. Langour would not have waited on the animated recital of an abler historian; but, lingering with him on the slow progress of science in former days, with him you would exult at its triumph in your own. The history of human knowledge is as instructive as delightful, and no liberal mind would willingly be ignorant of its strange and chequered course. The past, too, has its lessons for the future; and it is the god-like privilege of intellect to look towards both. The experience of a single life is an unit in the series of ages, and its errors are corrected, its truths confirmed by the undying experience of centuries.

DR. FERGUSSON ON YELLOW FEVER.

To the Editor of the Medico-Chirurgical Review.

Sir,—My attention having been called to a late number of the Medical Gazette, wherein the infectious nature of tropical yellow fever is advocated in a well-written paper by Mr. William Fergusson, Surgeon of the Royal African Corps, I feel myself called upon, in vindication of the pledge I recorded when I last wrote upon the subject, in reply to Dr. Fraser of Demerara, now to examine the facts he adduces and the arguments he brings forward in their support. I feel it the more incumbent upon me to do this with as little delay as possible, because Mr. Fergusson is known to be an officer of great professional merit, who has much distinguished himself by useful services on the coast of Africa, and whose opinions, founded on much experience and submitted with diffidence and candour cannot fail, if allowed to pass unquestioned, to have great weight not only in the medical world, but amongst all who are interested (and who is not ?) in ascertaining the true nature of the disease.

Mr. Fergusson at once and unequivocally admits that it never was imported into Sierra Leona, the fountain spring and head-quarters of yellow fever—that there it always arises spontaneously, being truly endemic when it does come, and never introduced or sporadic: but that in the other settlements of the same station it never has been seen unless when imported from Sierra Leona, and that in the majority of them it never has been seen at all! This is a strange and a bold assertion, and before it can be admitted as a medical truth demands the strictest examination. Another of his propositions seems to be equally extraordinary—that the disease after being imported often requires an interval from 28 to 33 days before it can be made to shew itself amongst the inhabitants of its new field of operation. This is so contrary to all the known laws of incubation in febrile diseases, or indeed in any other diseases, with the exception of hydrophobia, that it cannot be received without the strictest scrutiny, and indeed is negatived by himself in the instances of Monsieur Imbert and others who were supposed to have imported it. at the shortest contact, into the Island of Goree; but let us discuss if we can the first of Mr. Fergusson's positions before we enter upon the second.

Yellow fever is ackowledged always to spring spontaneously at Sierra Leona; then why may it not equally so arise at Gambia, Goree and Ascension, when circumstances favour the development of the disease. Mr. Fergusson surely

will not contend that Sierra Leona can possess an exclusive patent for the generation of yellow fever, and instead of this impossible incubation, would it not have been more reasonable to have allowed that the same causes which had produced the disease there, had, in the course of a month, been ripening into such accumulation as favoured its explosion at the other settlements of the same coast.

The last of these, from the fact of the Ban frigate touching there, and landing sick of yellow fever from Sierra Leona in the year 1823, soon after which the disease spread amongst the garrison, has ever presented the most difficult stumbling-block to the anti-contagionist; but from what we have seen of the leeward bases of hills in every part of the West Indies, or indeed of their bases whether to windward or leeward, we know that, what with drainage from the higher land and the difficulty or total absence of perflation, their lower levels are ever in a state to become the most fertile fields of accumulated malaria. To this Ascension, nearer to the equator by several degrees than Sierra Leona itself, can be no exception, and on the last visitation of yellow fever in that island (1838), the well-known causes of the worst tropical fevers, viz: the great collection and rapid drying of waters, had become accumulated in such abundance as to account most amply for any invasion of malarious fever, such as that of Sierra Leona itself, without having recourse to importation. The first case—that of the fever breaking out soon after the Ban landing the sick of it in the island, is a much stronger one; but one swallow does not make a summer—nor can a single instance ever be taken for proof. An interval of fifteen years elapsed between the arrival of the Ban and the second outbreak of the disease, and in that long period did no vessels from the head quarter station ever touch there with fever on board, and did nothing of the kind, no sporadic instances, ever occur but on the above-mentioned occasions? I know not whether they have or not, but I know that, to constitute an important contagion, the disease must unerringly ensue upon the introduction—if it fails as often, or oftener than it hits, then must there reside in the locality itself a cause stronger than the arrival of infected ships, which independent of any such aids will, according to laws of its own, cause the disease to explode under particular circumstances of atmosphere and locality, as yet beyond our ken, and leave us in wonder and dismay.

I have never been in Western Africa, but I should think Gambia or any other settlement on the banks of one of its great pestiferous rivers must come under the same description as Sierra Leona: and Goree, when sufficiently peopled by Europeans to give scope to the disease, may be classed under the same head. This I shall now endeavour to prove, more especially in regard to the first of these, from the analogy of New Orleans in North America. Like the settlement of Gambia it is founded on the banks of a magnificent river amidst the alluvion of its mighty current, with the difference of its containing a crowded white population. For nine months in the year it may be called a healthy habitation, but when the heat of autumn ascends to that of the tropics, yellow fever appears with the regularity of the equinox and departs as regularly when it descends in the scale of the thermometer on the first approach of the winter rains. Being the greatest emporium of the Southern States, ships keep arriving from every part of the world at New Orleans, without regard to the state of its health, where they often lose their crews, but that is all—they depart with fresh men East, West, South, and North, and I never heard even the strongest contagionists assert that yellow fever was imported anywhere from New Orleans. The fact is notoriously otherwise. Her steam-packets meanwhile ascend the stream by hundreds, laden with fugitives from the malarious pestilence to the cooler localities above. When ill with the disease they vomit on the decks as they go along, but whether they live or die they neither infect their fellow passengers nor introduce the disease into the settlements of refuge. Now can Mr. Fergusson, when he reflects upon the fact

of yellow fever being in the instance just quoted purely a disease of season and locality, really believe that it must be an imported plague when it appears on the coast of Africa always under the same circumstances of climate as the autumnal season of New Orleans? but I will give him another instance. At Vera Cruz, the nearest great town to New Orleans, but within the tropic (latitude 19°) it is ever at home to the European stranger provided he stays all night; but should he chance to move the smallest distance into the interior, yellow Jack, as our sailors call the disease, although prepared to fold him within his closest embrace had he caught him in the dark shades of the evening, always makes his bow at the city gates. Nothing can induce him to give convoy further, nor attend the stranger a foot of his way. Gambia and Goree, when we look at the map, may be called geographically, neighbouring stations to Sierra Leona, and when the climate is the same and the locality is either naturally, as on the alluvial banks of the river, or through the circumstances of season, made favourable, need we be surprised that when it prevails in the last, where, in Mr. Fergusson's own words it is "ever the undoubted product of the colony itself," it should also pervade the latter without the intervention of ships carrying the disease? Many, indeed I may say all, colonists will strive to remove the reproach of pestilence from their own shores. They will greedily imbibe the grossest delusions—swallow and propagate the idlest tales of importation, and shut their eyes to the most obvious facts of native origin, for as long as they can make the favourite belief subservient to the character and interests of the colony, consequently to their own. At Sierra Leona when the pestilence was springing up rife from under their feet, and before their eyes, Mr. Fergusson tells us they strove hard to discover the ship that brought it to them—but it would not do. Gambia, however, thinly peopled by Europeans, more remote, and less under observation, had more of its own way and took the consolation of discovering the importers in the persons of Mons. Imbert and his friend The flattering unction could not be resisted, and I regret to perceive it has pervaded even the enquiring mind of Mr. Fergusson. That all this at Gambia must have been a delusion, and that yellow fever in every situation must at all times have been a disease of high temperature and locality alone, let us now seek for what may be called European proofs nearer home, and better suited to the strictest investigation; and here I will take my demonstrations from the evidence of Sir William Pym himself, at Gibraltar, by far the most consistent and ablest advocate on the contagion side of the question. In his celebrated work on the Bulam fever, which has ever since so mischievously influenced all the health departments, indeed I may say the government of the country, at p. 51, he thus tells us how he arrested the progress of a yellow fever:—

"I directed a sufficient number of tents to be pitched outside the gates of the garrison, on the neutral ground, with a proportion of bedding, &c. and in the middle of the night without any previous information being communicated to the inhabitants, a strong guard with a sufficient number of carts proceeded to the infected district and conveyed the different individuals of the infected families *sick and well, with their baggage*, to the encampment which was established as a lazaret and kept in quarantine. I placed the sick in separate tents and appointed persons to attend them who had had the disease at a former period. A cordon of troops was also established round the infected part of the south district, which was kept in quarantine for fourteen days; proper persons were also appointed to superintend the purification of the houses, furniture, &c. and to report the slightest appearance of disease among any of the inhabitants—who were also paraded and inspected daily by one of the hospital staff."

Now can any thing be more evident, from this quotation, than that the fever was one strictly of locality in the town of Gibraltar, and that even with the aids of the diseased bodies, and all their baggage, it could not be implanted at the shortest distance beyond the gates of the fortress; for had the disease been

small-pox or any other true contagion, it might, in the fomites of the sick, have been carried round the world.

The measure, whatever may have been the understanding and the motive, was one of great practical wisdom, and ought to have afforded an excellent lesson in all the subsequent invasions of the malady. for a move even to the shortest distance at once stopped the disease, and furnished the most unanswerable reply to the doctrine it was intended to establish. Wherever pestilence, whether malarious or not, takes up its abode, it is a maxim of old standing to depart as soon from the place, go as far and stay as long as convenience will permit; but when large bodies of men, such as a garrison, or encampment of troops cannot so migrate, the smallest change of locality, as in the instance before us at Gibraltar, will often suffice to stop the disease; and there ought always to be a supply of tents in the garrison adequate to the occasion, whenever the disease arises again, as unquestionably it will, whenever the temperature of the season and the state of the rock favour its explosion. It has been triumphantly asked, why, if Gibraltar hill in its different aspects of becalmed locality and leeward base be so favourable to the production of yellow fever, Cadiz, perfectly flat on a dry isthmus, should have been visited by the disease fully as often? and the reply is obvious. All walled towns become depôts of accumulated malaria in the countries where that element of disease exists. Their walls and defences impede ventilation, and render perflation all but impossible. The poison collects at the base of the fortifications, and lurks in the angles and ditches of fortified lines. Hence Seringapatam in the East, not very unlike Gibraltar in its form, has ever proved a most dangerous quarter to Europeans. Hence Barcelona has more than once been visited by true yellow fever,* and hence have Fort Bourbon and Fort Edward in Martinique, and Fort Fleur d' Epé and Fort Matilda in Guadaloupe, ever proved most deadly to their garrisons. I may be told that when all the circumstances just related have been found in the fullest operation, not only for a season, but for courses of seasons, no yellow fever has been produced, and but for its introduction by ships it never would have occurred. To the first I assent, but the second is an invention or a delusion. Who can say, in our more fortunate land, why malignant, epidemic erysipelas, or fatal puerperal fever, should pervade whole districts in one season, and in another of no perceptible difference, or even more favorable aspect, neither the one nor the other can be called into existence; and are we, when in malarious countries, because we cannot tell why yellow fever should absent itself for a long or a short period, justified in asserting, when it comes, that it must have been introduced from abroad; proclaiming, consequently, the advent of a new plague, and denouncing the sick as being unapproachable and dangerous, for once make the people believe in the reality of imported pestilence, and we shall call upon them in vain for succour and assistance to objects breathing forth contagion and death to all who approach them.

With this question of tropical contagious fever I have often grappled, and I shall now try to grapple again. True contagion is no respecter of persons but the negro race, indeed I may say the whole coloured population, the most numerous by at least ten to one of the inhabitants of our West India Colonies, never take the disease; and the native Creole whites and creolised inhabitants, relaxed by the climate and enervated in their constitutions, therefore less fitted

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* I will here venture to prophesy that, if ever the heat should amount to that of the tropics, and be continued for a sufficient length of time, St. Sebastian, from its form, will become the seat of yellow fever. Its beautiful tide river, through which our troops at low water waded to storm the breach, has hitherto to a certain extent been a safeguard.

to resist any new infection, are infinitely less liable to be attacked than newly-arrived Europeans. I have read of negroes taking yellow fever when returning to the colonies after a residence in cold countries, but though I have twice in the course of my life sojourned for a course of years in the West Indies, I never saw it, nor met with any one who had actually seen it; and is the negro infection-proof? Have the true contagious of small-pox, measles, scarlatina, &c. no power over him? or typhus fever when in this country, or plague when in the Levant? and can he resist the infections of syphilis and scabies any where? These questions would be ridiculous, if seriously propounded, for it is notorious that whole plantations have often been ravaged whenever small-pox and the true contagions have been introduced. Why then does he resist the supposed contagion of yellow fever?—simply because it is not a contagious but a malarious disease; and against all malaria it is well known that he is fever-proof: but let us examine this question if we can a little more deeply. The contagion of fever does not readily take root under tropical heat—our typhus fever cannot easily be carried to the West Indies, or if it should in foul transport ships, perchance, be landed there, it is immediately dissipated by the heat of the climate. The high temperature is most prolific of fevers, but not of contagious ones. The late Dr Henry, of Manchester, proved by positive experiment that of all disinfectants heat was the speediest and most infallible. He exposed the gross tangible contagious matter of small-pox, cow-pox, and scarlet fever to a heat of 140° of Fahrenheit, and found that they were thereby deprived of all infectious power; and in the case of typhus fever not being transportable to the tropics, we had, during the last war, more particularly in the ill-fated expedition of Admiral Christian, in the year 1795, proofs innumerable that the gaseous, aerial contagions were dissipated under a heat of between 80° and 90° of the same scale. Having been there, I speak from actual observation. We know, moreover, that the plague of the Levant disappears as soon as the high Summer heat in Egypt sets in,* and that it never yet has been carried beyond the tropic into the equatorial regions. Now should not these facts (for they are facts) weigh with Mr. Fergusson, before he propagates the dangerous belief of yellow fever, with the exception of Sierra Leona, (and why that exception?) ever being an imported contagious pestilence, as if contagion could be the product of the disinfecting principle itself! I have never enjoyed the honour of his acquaintance, but I duly appreciate the usefulness of his life, and, in the hope that he may yet have a long career to run, I entreat he will give them the consideration they are entitled to, and then I am sure he will no longer lend himself to a delusion, which, wherever it can be made to prevail, must be attended with consequences at which humanity shudders. Let him reflect that the word contagion, always the word of fear, if pronounced by him, who has had so much experience, may prove the word of doom; and that it will be far more honourable to acknowledge that he may have been mistaken, than to persist in an error which, if received as a truth, must prove fatal not only to many of the present generation of Europeans inhabiting the tropics, but to thousands yet unborn.

I abstain from repeating the arguments I brought forward when I last wrote in the Medical Gazette, in reply to Dr. Fraser. They are dated February 24th and April 24th, 1838, and also United Service Journal for April, 1838, and I beg Mr. Fergusson will do me the honour to read them, and then, when he returns to the coast of Africa, the field of his usefulness and research, he will I hope, on the next invasion of yellow fever, take for his guide the emphatic words of my friend Dr. Gilkerest, of Gibraltar—PLACES NOT PERSONS—for they comprehend the whole history of the disease, in its source, nature, and

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* Vide Assalini.

progress. The cruel quarantine will then no longer be made to vex the coast, and the courage of the inhabitants, when they come to know what the disease actually is, be assured. They will then, instead of denouncing one another, seek, in as far as they can, the only rational means of safety in a change of abode, but if the panic of contagion be kept up, then adieu to all the feelings of common humanity, no matter how humane and christianised they may originally have been, for self-preservation in all ordinary minds is ever the first law of nature. The sick will be deserted, thereby aggravating the malady a hundred fold, at the risk, too, of generating a temporary contagion of neglect and accumulation: for such is the nature of all febrile contagion (I speak not of the exanthemata) even within the torrid zone. All this will be in Mr Fergusson's power whether for good or for evil, and I cannot doubt that he will choose the better part, for the superstition of contagion in tropical fever, the remnant of an age gone by, although still taught in our schools, is fast passing away, and I trust he will no longer be influenced by it. The doctrine is eminently antisocial, and if the facts and arguments I have adduced in the present and other writings to which I have referred him, are not to be refuted, I am sure he will acknowledge it to be equally unphilosophic. It is surely full time that the fumigators—the burners of bedding—as if the heat of boiling water at 212° would not suffice—and all the ill-omened hosts of quarantine, should be referred to the beautiful demonstrations of Dr. Henry, which must soon lay them to rest as effectually as the ghosts which frightened our forefathers were said to have been laid in the Red Sea. These experiments are pregnant with the most important results to the best interests of mankind in every part of the world, and will embalm his memory for as long as science and humanity are appreciated amongst the friends of the human race.

Having now, I believe, replied sufficiently to the letter of Surgeon Fergusson, I shall proceed to some general considerations of the nature of tropical fever.

In the examination of this question it seems hard that we, who have lived for years under the direst scourge of the disease, and sustained its attacks in our own persons under the most appalling forms, should always after a time be set aside as if we had never spoken nor written on the subject: and that the schools teaching contagion without ever having seen yellow fever, and the home authorities should, like the resuscitations of animal magnetism, again reassume their sway—setting at nought the evidence of experience and the accumulated testimonies, all but unanimous, of the fleets and armies who were so severely victimized by it in the course of last war. In the year 1795 England put forth her strength, and a magnificent armament that might have turned the tide of war on the Continent was arrayed under Sir Ralph Abercrombie for the recovery of sugar islands and the conquest of St. Domingo. To the latter I was attached, and its fate was the same as has ever attended, and ever will attend, a European army proceeding to the West Indies—the troops died by thousands, and if ever yellow fever and black vomit reigned supreme, it was then and there: but did that make us contagionists? On the contrary, it unmade us I may say to a man, and cured us for ever of the delusion that had been imposed by all the schools and authorities at home.

Dr. Bancroft has given the history of contagion and its short-lived reign in the windward colonies—Doctors Jackson and M'Lean that of St. Domingo; and although nearly half a century has elapsed, the inspectors general, Doctors Theodore Gordon, Sen., Borland, and Warren, who served with me there, are yet alive to prove the non-existence, the impossibility of contagion, and this I can confidently say was the thorough conviction of all, whether medical, military, or civilian, who had been obliged to remain a year or longer in the country. What we saw every day of our lives was *la fièvre Européenne* of the French—(la fièvre des blancs)—that most emphatic comprehensive phrase which in one word truly defines and characterises the disease. All history too confirms it:

turn to our annals, and it will there be seen that the expeditions to Carthagena, the Havana, St. Domingo, and indeed every other to the West Indies, whatever might be the event of war, had but one termination—the burial of the troops from yellow fever. Hereafter Great Britain, unless she means the same tale of woe to be rehearsed for ever, must condescend to conquer, and more especially to preserve her conquests, with the black man's instead of the white man's arm —so much for the Army.

In the Navy it may fairly be supposed that the medical staff shut up in the same ship with the sick could scarcely fail to know whether the distemper was contagious or not; and although not so unanimous on the subject as an experienced army medical staff, are yet by a great majority anti-contagionists. The dissidents are to be accounted for from the comparative rarity of yellow fever on board-ship, (for it is a land disease,) where they only see it as it is brought from the shore, or as it comes in bursts or explosions arising from the state of the hold or cargo or greenness of the timbers; and if it be the first of the kind witnessed, it may be difficult for any one, whether medical or not, to discriminate between the current of epidemic and contagious disease. I have already, in the Medical Gazette of last year and other publications, given the history of imported yellow fever at Barbadoes in the instances of the Regalia transport and the Childers sloop of war, both under my own particular care and direction, and shewed the impossibility of their being so much as suspected, after the freest communication of having communicated any contagion; and to illustrate these points still further, I shall here relate two experiences of what I may call marine yellow fever—the first occurring to myself, the second to a professional gentleman* now in Windsor.

In the year 1816, while yellow fever was raging at Barbadoes, it was my lot, I suppose, from being an old seasoned subject, to the taken with very violent but irregular intermittent fever. Admiral Harvey invited me to go on a cruise with him amongst the islands in the flag-ship, and soon after leaving Carlisle Bay, yellow fever broke out amongst the crew. There were, if I recollect right, seven very bad cases; but Mr. Neale the surgeon, a sensible and excellent officer, at once negatived the smallest idea of contagion. The assistant-surgeon, Mr. Byrne,† brought up his cot from the cockpit and slung it in the sick-bay, in order that at all hours he might be near his patients. Their comrades were allowed the freest access, and the officers of the ship were encouraged to visit and shew them every attention. The consequences were the happiest; for although the cruize lasted several weeks, we did not carry back a single case of the disease to Barbadoes.

The other experience to which I allude took place at Kingston, or rather Port Royal, Jamaica, where my friend was taking his passage along with a detachment of artillery and some officers of a West India regiment to Belize, in the Bay of Honduras, in the Recovery brig, commanded by Captain Hamlin. The yellow fever had been raging in Jamaica in the same manner as at Barbadoes, where the Recovery had buried three of her crew; and on the second day of the voyage, the first mate sickened and speedily died, under the most appalling form of the disease. The crew were panic-struck, and, reporting themselves sick, lay down upon the decks, and the captain, believing himself doomed, took to his bed. My friend luckily, having when at sea amused himself in taking observations, assumed the direction of the ship's course, and, favoured by the

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* Mr. H. Moore, Dentist.

† I write from memory, and trust that I do not mistake his name, for his conduct was beautiful. I know no better term to express this tribute of my respect, and if in life I hope he will accept it. I believe he afterwards sailed with Capt. Basil Hall, as surgeon of the frigate he commanded.

winds, she reached Belize, where, as soon as the pilot had made his report, her arrival was looked upon as that of the death-ship, and she would either have been kept in the deadening quarantine or forced to sea again, had not the quarantine master, Staff-surgeon Thornton, fortunately been a man of observation and knowledge. He visited the sick, and declared that there was not a case of yellow fever nor any thing like it amongst them—they were merely panic-struck, and as soon as they received the hospitality and succour of the port, which they did without precaution or reserve, they were speedily all well again. Now in the first case, when the epidemic presence was upon us, had the medical men on board lent themselves to the delusion and cried contagion, we might, I verily believe, have unmanned the British flag, and converted the admiral's ship (*silvæ filia nobilis*) into a pest hulk; and in the second place, there can be little doubt that had the ship been kept out at sea, or laid up in quarantine with the plague-mark upon her, disease would have done its work amongst the terrified people, and we then should have had a new edition of contagion, as in the celebrated case of the Hankey, arising from the deceased mate of the ship. One instance can never be taken for proof, nor do I wish what I am going to say to be held for more than it is worth, but on this cruise, and on other occasions, I saw hospital patients with ordinary diseases exchange beds with the sick dying of yellow fever, without any consequences resulting. I have even in the course of my life been obliged, though necessity and fatigue, to submit to something of the same kind myself, and I declare that, but for the personal impropriety, I should not feel the smallest hesitation to do it again, or to sanction its being done by others. In the St. Domingo army the disease, from some unexplained peculiarity of the time, rarely attacked the women attending upon and sleeping with their dying husbands, and the number of the latter some of these females had expended, for short as their wedlock had been, their widowhood was far shorter, became a constant source of jocularity and remark.*

That there are anomalies and difficulties in regard to the question of yellow fever—its sudden bursts and invasions—its disappearances too when within the Tropics, without in so far as we can see, any adequate reason, there being no such bursts within our recollection in Bengal, nor on the shores and islands of the East Indian seas, I freely acknowledged; but it has not been altogether unknown there, for one of its earliest designations was the *maladie de Siam*. In the East they have never dreamed of contagion in any tropical febrile disease, and that it ever should have become our creed in regard to the West must have been occasioned by European troops being landed there in large masses, and despatched on service throughout the colonies in crowded ships, thereby generating, it may be, although I can scarcely believe it under such a heat, for the passing day, a contagious atmosphere of accumulation. I will even go so far as to admit the possibility of this occurring in densely populated towns and garrisons such as Gibraltar, but the difference of a contagious atmosphere and a contagious individual is this. In the first almost all will be liable to fall under its influence while they remain in the place; but in the latter case, take the worst of the sick that can be selected out of the contaminated locality, and you may approach him as safely and receive as little contagion from him as you would from a marble statue or a graven image. True contagion infects at the shortest interview, and through the instrumentality of the smallest particle even of an invisible gas, in all situations and places: but factitious temporary contagion can only acquire power through the medium of a crowd generating ac-

* The case was widely different at Barbadoes in the year 1816, when the women, more especially those of the newly-arrived Queen's Regiment, died fully as fast or faster than the men.

cumulation. In the East the approach to its coasts was interdicted to all colonists under the monopoly of the old East India Company—crowds of Europeans never went and never resided there—nor do they even now; but when the suburbs of towns come to be filled with them, as at Gibraltar, it will then be seen, for it is eminently the disease of high temperature, whether the maladie de Siam may not again arise even in Calcutta.

These questions become deeply interesting when we reflect upon the present condition of by far our richest colony of the West (Demarara), where one of our finest regiments is reported to be under a course of speedy extermination from yellow fever—while I write even now the work may be accomplished. When it ravaged that colony, three years ago, Doctor Fraser, the quarantine master, true to his calling, declared that it was imported from Kerrynane,* or some such name, that it was fearfully contagious, and that all were Atheists who did not believe it.† To have imported the disease into such a place would indeed have been a work of supererogation, for a deeper—a mightier swamp I never contemplated. It may be called the deepest in the world, and the terms and periods of healthiness, instead of unhealthiness, at Demarara constitute the wonder; and here I feel myself called upon to speak of malaria as emanating from marshes and of vegetable putrefaction as constituting its element. When at the head of the medical department in the West Indies during the years 1815, 16, and 17, I made it my business, and I considered it my duty, to explore in as far as was practicable every swamp in the inhabited quarters of the windward and leeward colonies, and the result perfectly corresponded with that stated in the Government medico-statistical report—that even the most declared open swamps did not at all times produce disease amongst the inhabitants dwelling in them or near them. My experience led to the conclusion that for as long as they were filled with water they were generally harmless, but whenever they, or part of them, came to a dried or an advanced drying state, they were as generally pestiferous. In regard to vegetable putrefaction, as evinced by the smell, it absolutely meant, or at least produced nothing, no matter how strong the fætor, and as I have stated in former publications, I have experienced it so strong as to deprive me of sleep. The most declared swamps in the fullest process of vegetable growth and decay were under the above circumstances innoxious, but so were not the deep ravines—the dried water-courses of hills, or the leeward bases of mountains, which perflation could not reach—these I may say were uniformly pernicious to all the white race of mankind. Swamps do not always produce malaria in tropical climates, but these never fail, and I believe never will fail, either there or in America or Europe, for as long as the steady atmospheric heat without rain amounts to between 80° and 90° of Fahrenheit. I am not pretending to say what malaria is, nor whether it be the same element as marsh miasma or not—the marsh so abounding in one may, when approaching to dryness, emit both—the ravine, if there be two elements, only one: the marsh when filled with water, may prove as habitable as any other land—the ravine, more especially its bouchure, never: the marsh is notorious for producing ague, and the lesser grades of what has been called malarious fever—the ravine only the higher; it would even appear to be incapable of giving rise to the former, and when the time for invasion arrives, makes itself felt in bursts and explosions, often without previous warning, of such fevers as have destroyed our armies and devastated our West India colonies: the cleanest lands will not at these times save the inhabitants; for the dry rocky water-courses—the purest

* I had heard of Derrynane, but where Kerrynane is I have never been able to discover.

† This is much such an argument as was used by Lord Peter in Swift's Tale of a Tub.

sands, after they have been saturated with water, and the hard mountain basin, where vegetation never grew, become its constant abode, *provided always that they are to leeward and cannot be ventilated.* Vegetable putrefaction! as if our dung-heaps and pig-styes in every part of the world did not teach us better. Where was it in the arid plains of Spain, long denuded of all vegetation, when our armies were paralysed by autumnal fevers?—where is it even now in the dried pestiferous Champagna di Roma?—and why did it sleep when in healthy, (comparatively speaking,) because rainy seasons? I visited and reported upon the putrid marshes of Trinidad, Berbice, Guadaloupe, Tobago, and St. Lucie. Malaria is in fact the production more or less of the earth's surface—never of the ocean's—in every hot season or climate. It is certainly absorbed by water and dissipated by the winds, but when these agencies fail, it accumulates into force, and spreads disease and death around. We do not yet understand it, and never will understand it until we can clear our heads of the long-cherished superstition (for it deserves no other name) of vegetable putrefaction being the sole and only source of malaria. The leaven of the false creed will otherwise continue to prejudice our minds, and when disease, for which in the absence of marshes we can discover no cause, makes its invasion, constrain us to seek refuge from the trouble of thinking in the doctrines of contagion, and the monstrous safeguards of quarantine—a quarantine, in fact, against the heat of the season calling into existence a morbific element of the natural world. I am not pretending to lay down the law to others—I am only telling what I myself have experienced; and if the testimony of an eye-witness can be of any avail, the authorities, when Gibraltar again falls under the dominion of pestilence, as fall it will whenever the drought and calms are long continued, the garrison numerous and the heat great, may, if they choose to enquire, find the source of the disease in its hollows and fortifications and leeward base, without seeking for its importation from beyond the Atlantic: the fabled poison of the far-famed upas tree is but a type of malarious locality. I believe it grows in the unventilated mountain-hollows of dry rocky deserts, where the malaria is so deadly, but the tree itself, though exuding, when wounded, a narcotic poison, under the form of a white milky juice, is as safe to approach and to handle as ever a yellow-fever patient was in St. Domingo, and I believe I may add with confidence, in Gibraltar: and is this all declamation, and have we no remedy? It stares us in the face. Let yellow fever for ever be expunged from the list of importable and transportable contagions; the whole world of its range, as we see at this moment at New Orleans, Mobile, Augusta, &c., (and can a ship, with incomprehensible punctuality, have gone to all these places just at this season, as if for the express purpose of dropping yellow fever) is every year proclaiming the impossibility—dismiss, in as far as that disease is concerned, the ministers of quarantine, for they are paid and appointed to deceive—wherever it prevails seek the only possible safety in removing from the locality, so often a very limited one—and when that cannot be done, firmly await its sure extinction in the changes of the season and eschew for ever the unchristian, I may in its consequences call it the atrocious doctrine, of excommunicating the sick, for in that way you may, through neglect and accumulation, generate a true contagious pestilence, which atmospheric heat without ventilation will neither dissipate, nor cold extinguish. Do this—I address myself to our rulers—and the whole race of importers and expurgators and fumigators* will no

* God forbid that I should be supposed to utter a word in derogation of discipline and cleanliness, but of all absurdities fumigation against we know not what (for who can tell the nature of those vapours that convey diseases) seems to me the greatest. In the application of caloric we possess a certain and immediate disinfectant, and in the admission of light, air, and water, we

more be seen, for men's minds, redeemed from panic and prejudice, will then be turned to the lessons of true philosophy, and the British name be rescued from the reproach of having so long cherished a delusion so discreditable to the national character, and injurious to our best commercial interests.

I am now past the age and the ability of active service, and must leave the swamps and ravines of the Tropics to be explored hereafter by able men; but I can still stand sentry at the gates of the printing office, and when illicit matter, pregnant with delusion upon the public mind, is passing through its engines, refuse it currency until subjected to examination, and bearing my protest; and with this protest I shall conclude, although I believe that, even at the risk of being deemed garrulous, I shall trespass on your pages with another letter, for even while I now write fresh matter, the recollections of times long ago keep rising to my mind, which (from self-partiality it may be) I cannot help thinking may prove further illustrative of tropical fever—its sources—its phenomena—its prevention and treatment.

W. FERGUSSON.

Windsor, October 10th, 1839.

Dr. STRANGE ON THE CLIMATE OF NAPLES.

Sorrento, July 8th, 1839.

Dear Doctor Evanson,

I transmit to you a complete copy of the Meteorological Tables, which I showed you at Naples; and of which you expressed a desire to have a copy. You will find enclosed—1st, A copy of the meteorological observations made daily by me at Naples and Sorrento, during the year 1838,*—2nd. An abstract of these meteorological observations—and 3rd. A table shewing the mean of the hygrometer and thermometer, &c. &c. With such general remarks on the climate, and on the mode of making these observations, as I thought would prove useful.

Your's, very truly,

R. STRANGE.

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have others equally sure but of slower operation, and indefinite with respect to time—why then resort to fumigation, even if it were proved to be a disinfectant (which it is not), unless to mystify the people. The trick has had its day, and is becoming stale—it has been too long practised, as I know from experience, for on my last return from the West Indies, in the year 1817, I was subjected to personal fumigation on three succeeding days at the quarantine station in the Isle of Wight, and in confoundedly cold weather too, lest I should introduce the yellow fever into England!!!

* These Tables are in the possession of the Editors; but are too voluminous to print in this Journal. The abstract is quite sufficient.—*Eds.*

ABSTRACT of the METEOROLOGICAL OBSERVATIONS

MONTHS.	PREVAILING WINDS. Number of Days from each Quarter.								RAIN GUAGE			
	South	South-west	West	North-west	North	North-east	East	South-east	Number of Days on which Rain fell	Quantity of Rain in French lines & decimals	Mean of the differences between the dry and wet Thermometers	Mean absolute dryness according to Dr. Mason's calculation
JANUARY.....	8	6	2	4	2	2	2	2	22	50.19	4.73	11.01
FEBRUARY.....	2	10	4	4	1	4	2	1	21	115.67	3.70	8.61
MARCH.....	3	7	3	..	4	5	4	5	21	41.99	3.84	8.94
APRIL.....	5	11	2	3	1	2	1	5	10	41.27	5.70	13.28
MAY.....	6	13	1	4	4	..	1	2	6	10.98	5.80	13.50
JUNE.....	5	12	6	1	..	2	..	4	4	6.04	4.93	11.52
JULY.....	4	11	9	2	..	1	2	2	2	1.31	5.70	13.27
AUGUST.....	8	10	8	3	..	1	..	1	4	16.35	6.77	15.77
SEPTEMBER	9	5	9	2	1	..	1	3	4	11.37	4.65	10.81
OCTOBER.....	3	5	5	2	..	11	..	5	10	36.77	4.83	11.22
NOVEMBER.....	4	7	..	4	5	5	..	5	14	90.59	4.60	10.72
DECEMBER.....	..	3	..	..	7	10	3	8	10	82.68	4.26	9.84

made at NAPLES and SORRENTO during the YEAR 1838.

HYGROMETER.				THERMOMETER.							
Greatest absolute dryness observed during the Month	Mean Dew Point	Highest Dew Point observed as the mean of a day	Lowest Dew Point observed—mean of a day.	Maximum of the month	Minimum of the month	Mean maximum	Mean minimum	Mean Temperature	Mean Diurnal Variation	Greatest Diurnal Variation	Least Diurnal Variation.
28th, 21.00	41.43	50.34	30.17	62.00	38.00	57.30	47.60	52.45	9.70	18.50	2
19th, 22.16	43.21	51.67	32.50	64.00	41.00	56.28	47.36	51.82	9.00	15.00	3
31st, 26.50	45.26	53.00	31.00	65.00	41.00	60.10	48.31	54.20	11.80	21.00	5
24th, 28.00	42.17	50.17	31.67	70.00	43.00	62.30	48.60	55.45	13.63	20.00	6
2d, 37.33	48.72	61.00	40.00	83.00	51.00	69.00	55.51	62.22	13.50	24.00	6
9th, 31.50	55.68	64.34	36.17	81.00	55.00	73.44	60.96	67.20	11.25	15.00	6
15th, 30.33	57.81	64.84	45.00	82.00	59.00	77.00	65.16	71.08	11.84	15.00	8
12,16,18, 31.50	54.84	65.67	45.17	80.00	58.00	76.38	64.84	70.61	11.55	15.00	8
8th 9th 28.00	56.55	61.84	49.00	81.00	56.00	73.30	61.43	67.36	11.86	16.00	8
6th, 12th, 23.50	50.29	60.50	36.84	73.00	50.00	67.46	55.56	61.51	11.90	18.00	6
7th, 30.50	48.27	59.00	29.67	70.00	45.00	65.76	52.22	58.99	13.51	20.00	4
2d, 18.66	39.40	54.67	23.34	65.00	30.00	53.90	44.64	49.27	9.25	16.00	2

TABLE shewing the Mean of the Hygrometer and Thermometer—the Quantity of Rain which fell—the Number of Days on which Rain fell—and the Number of Days each Wind prevailed at Naples, during the year 1838.

RAIN.		HYGROMETER.				THERMOMETER.					No. of Days each Wind prevailed	
Number of days on which Rain fell	Number of French Lines & Decimals of Rain during the year.	Mean of the differences between the dry and wet Bulbs	Mean absolute Dryness according to Dr. Mason's calculation	Greatest absolute dryness observed during the year	Mean Dew Point	Highest Dew Point observed during a whole day	Lowest Dew Point observed—mean of a whole day	Maximum of the year	Minimum of the year	Mean maximum	Mean minimum	Mean Temperature	Mean diurnal Variation	Greatest diurnal Variation	Least diurnal Variation	
137	505.21	4.96	11.54	37.33	48.22	65.67	23.31	83.00	30.00	66.01	54.35	60.18	11.56	24.00	2.00	43 Days from South east
																57 Days from South
																103 Days from South-west
																49 Days from West
																29 Days from North-west
																25 Days from North
																43 Days from North-east
																16 Days from East.

These Tables were kept, if not with all the exactness I could wish, at least with as much regularity as my professional duties would permit—the observations were generally taken three times a day at the hours specified, or as near to these hours as I could conveniently do it. The following remarks may be useful, as explaining the manner in which the tables were kept.

I. The rain gauge, from which the quantity of rain is taken, was kept at the Royal Marine Observatory, about two miles from my house, and at an elevation of two hundred and sixty French feet above the level of the sea; the rainy days, however, were notes by myself each evening, and the crosses (x) in the column marked *prevailing winds*, shews what appeared to me to be the proportionate quantity of rain at the time it fell, from x, a few drops, to x x x x, heavy and long-continued rain. The measurement of the rain is made in French lines and decimals, and as I am not quite certain as to the proportion between French and English lines and inches, I have thought it best to give, in the table, the original measurement; during the year 1838, therefore, you will perceive that there were 137 days on which rain fell, and that the quantity of rain amounted in all to 505.21 lines French measurement: now if we reckon the French line as equal to 0.91 English, (which I believe to be pretty nearly the truth,) we shall then have 100:91 : : 505.21:45.97 English inches, or within a fraction of 46 English inches. This quantity of rain is great in comparison with England; but the evaporation after showers is so rapid here, that the streets are generally quite dry in half an hour after the rain falls. I must also remark that the year 1838 was unusually wet, especially during the months of January, February, and March—and in the whole year of 1838 there fell nearly a fifth part more of rain than usually falls in one year—the average quantity of rain I believe to be about 36 inches.

II. The hygrometer I use is the same as that employed by the late Dr. Mason in making his observations in the Island of Madeira. It consists of two thermometers, the bulbs of which are covered with thin muslin or tafeta—the one bulb dry, the other kept constantly moistened with boiled or distilled water—the difference between these two thermometers noted three times a day, and the mean of the three observations taken, constitutes what is called the *mean of the differences observed*, in the first column under the head "Hygrometer". The second column under the head Hygrometer is intended to shew the degree of absolute dryness which exists in the air, which, according to Dr. Mason's calculation, is a fraction more than double, or as 7 to 3 to the difference

observed. The third column, "the greatest absolute dryness," will shew what the greatest dryness has been during the day, and this is generally between the hours of 1 and 2 in the afternoon. The dew point is obtained by subtracting the mean absolute dryness in the second column from the mean temperature. Obs. I may here remark that the dampest time of the day is from sun-set to sun-rise, and that the maximum degree of saturation is usually about an hour before sun-rise. A little before sun-rise, however, the evaporation begins and goes on increasing till 1 or 2 o'clock in the afternoon, at which time the dryness is usually at its greatest degree. About 4 o'clock in the afternoon the evaporation begins to diminish, and consequently the dampness to encrease, and this goes on till after sun-set, from which time till the morning the saturation of the air is at its greatest.

III. The thermometers I employ for obtaining the temperature are of two kinds—the temperature of the night, or the minimum of the 24 hours is taken with a spirit register thermometer, which is placed in a sheltered situation open to the North and East; but as it is impossible, from the position of my house, to keep the maximum register thermometer free from reflected heat at all hours of the day, I have preferred taking the maximum temperature by means of a common thermometer placed in the shade in a North-east aspect, between the hours of two and three in Summer, and between one and two in Winter, these being the hours of the day when the temperature is usually at its highest pitch. The thermometer which I employ for taking the temperature at nine, two, and ten o'clock, is the same which forms the dry bulb of the hygrometer. I use this thermometer not only because it saves time, but also because the bulb being covered with muslin, it is thereby better protected from reflected heat. Obs. It will be observed that the mean temperature for the year is given by me at 60.18, which is lower than that given by Sir James Clark, in his work on Climate, as the mean temperature of Naples. This circumstance is easily explained—my observations are made during the Summer months at *Sorrento* instead of Naples, and there the temperature is considerably lower than in the latter place, particularly during the months of July and August, at which time the country being covered with vines and vegetables, the temperature is not increased as it is in Naples by terrestial radiation.

IV. The peculiar position of Naples renders it very difficult if not impossible to state precisely the quarter from which the winds come: the town stands on the declivity of a hill, open to the sea on the South, but defended on the side towards the land, not only by the hill on which it stands, but also by higher mountains behind this which have a considerable influence in altering the direction of the wind, so that often while, in one part of the town. the wind appears to be from the North, in another part it will be from the North-east, and in a third from the North-west. Although, therefore, I have, in these tables, divided the winds into eight points, still, as affecting the climate, and thereby producing an influence on the health of the inhabitants, it will be sufficient for our purpose to class them under two different heads; the first comprehending the land-winds, and the other the sea-winds. Under the name of land-winds I include all winds from the North of West round to the East; and under the opposite denomination of sea-winds I include all from the South-east, South, and South-west. The West wind ought properly to form a division by itself as being different from both the others—neither so cold and exciting as the land-winds, nor so wet and stormy as the wind from the sea; this wind, however, is unfortunately of so short continuance, that it can hardly be considered as exerting any influence on the salubrity or insalubrity of Naples. The first class of winds, then, the land-winds, are all those which come from the North-west, North, North-east, and East. They are most frequent during the vernal and autumnal months, and this year they were most prevalent during the months of December, November, October, March, February, and January, in the order I have now stated them: these winds are dry and cold, irritating to

the lungs of patients in the first stage of tubercular phthisis, and injurious to many patients who suffer from spasmodic asthma, rheumatism, or from irritation of the mucous membranes of the stomach, intestines, and air-passages. On the other hand, to patients who suffer from simple debility, without any organic affection, and to those who are affected with particular kinds of nervous head aches, and to whom the air of England and even that of Rome feels heavy and oppressive—to patients with relaxation of the muscular fibre brought on by uterine or other discharges—in fact, to all patients who require a bracing air, or whose complaints are benefitted by tonic medicines—to all such this land-wind is most agreeablea nd beneficial, and it is surprising how suddenly persons, who can hardly stir from the sofa during the prevalence of the sea-wind, regain their strength and spirits as soon as it comes round to the land. It is, however, a dangerous wind to patients who suffer from pulmonary disease or from organ-c disease in general, more especially as the variations of temperature are always greatest while this wind prevails, the difference of temperature between the day and night, or, in other words, the diurnal variation, being then at its maximum, as well as the difference of temperature between the sun and shade; for as the sky is usually at this time very clear without any clouds to intercept the rays of the sun, its power is usually great, while the wind coming from the snowy Appenines renders the shade unusually cold.

The sea-winds are by far the most prevalent, and of these the South-west is the most frequent. In 1838 the sea-winds were in proportion to the land-winds, as 250 to 115. In summer the sea-breeze is from the South-West, and usually blows from 10, a. m., till 5, p. m.; and in winter it blows more than two-thirds of the time. In winter the rain and strongest winds usually come from the South-West. During the continuance of these winds the mean temperature is greater, and the diurnal variations less, than when the opposite winds prevail; therefore considered as being well suited to patients with pulmonary disease, they are rheumatism, and chronic bronchitis; but, on the whole, the climate of Naples is too variable for pulmonary diseases.

MR. STILON (OF MALTA) ON THE BLIND CATHETER.

Every medical man who has been engaged for any time in the practice of his profession, must be fully aware how indispensable for the proper and conscientious discharge of his duties is a real zeal and anxious interest in the welfare of his patients. How many inventions, how many solid improvements in science may be traced up to this cause, and whatever merit the new form of catheter, represented in the accompanying plate, may have, it owes its origin to this cause, having suggested itself to me during an anxious attendance on a case of a very trying nature.

In the month of October of the year 1838, I was requested to attend Mr. Gilio of this city, a person in easy circumstances, and of about 80 years of age. I found him labouring under severe retention of urine, and in great pain. He referred his complaint to piles, from which he had been suffering many years, and which frequently appearing externally, brought on copious hæmorrhage, and occasioned him great distress.

For some time before I was called he had observed that he voided but a small quantity of urine, and attributing this to the presure of the hæmorrhoidal tumour, had had leeches applied. The relief which followed was only trifling, and in no way proportioned to his expectations, as on any former occurrence of the same symptoms the application of a few leeches had always proved most effectual.

The urine, in the mean time, kept accumulating; the bladder was soon greatly distended above the pubis, and the unfortunate patient was incessantly tormented with a desire to micturate.

The case was sufficiently urgent, and I immediately introduced a gum elastic catheter, which brought away a great quantity of urine mixed with blood.

In introducing the instrument I met with some difficulty at the neck of the bladder, and concluded that that was the seat of the obstruction. On examining the instrument, after having withdrawn it, I found the eyes, or apertures, at its rounded extremity, filled with coagulated blood; however there was every reason for supposing that the bladder had been completely emptied.

For several days I was obliged to introduce the catheter twice a day. But on introducing it one morning I was surprised by not seeing any urine flow from it. I took out the wire, still no urine issued—withdrawing the catheter, I found its apertures completely closed with coagula, which obstinately appeared to oppose the passage of the urine. I now hoped, by re-introducing the catheter several times, and freely moving it about, I might succeed in breaking up the coagula. I tried, but in vain; and as the case was becoming very urgent, I desired a consultation should take place. This was immediately attended to, and while the other medical men were present, I introduced a longer catheter than the one I had used before, and so succeeded in extracting a moderate quantity of urine mixed with blood. On account of the former difficulties it was thought advisable by the other gentlemen present, as well as myself, to leave the catheter in during the night. As the catheter did not act at all, I withdrew it at my visit next morning, and found it filled with coagulated blood. After cleaning it well I again introduced it, but to no purpose, for not a single drop of urine followed. The symptoms were now so urgent, that there was every reason to fear for the patient's life. Animated however by the well-known saying,—"Nihil tam arduum quod non expugnat pertinax operosa ac diligens cura," I did not lose all hope. The symptoms seemed to me clearly to indicate the nature of the obstacle. There were evidently coagula either in the cavity of the bladder, or in the canal of the urethra; and this by closing the apertures of the catheter, of course prevented the flow of urine through it. After pondering for some time on the peculiar circumstances of the case, it struck me that if I could modify the catheter, so as to have in it a portion that might push aside the coagula, while another gave passage to the urine, it would answer the purpose, and enable me to give immediate relief. The printed form of the instrument, which I inclose with this, soon suggested itself to my mind, and I hastened at once to have one made after my direction. I shall not attempt to describe the anxiety with which I again visited my patient; the symptoms were more urgent than ever, and he was crying aloud for relief. I introduced the modified catheter, and, to my great satisfaction, the urine immediately flowed from it in great quantity and with the greatest ease. Every successive trial of it on the following days met with the same success, and further reflection and experience has fully convinced me of the advantages which such a form of catheter will be found to present—the more it is generally known, and the more it is applied to the many cases of a similar nature which occur in the course of medical practice. This conviction induces me to beg of you to publish the accompanying design, as well as the history of the case, which suggested the modification, and should feel highly gratified if it in any way meet the general approbation of the profession.

I shall conclude by some few remarks on the instrument itself. It can be introduced without the least fear of limiting the mucous membrane of the urethra or bladder. The screw which runs through it perfectly insures this, and neither during its introduction, nor during its extraction, can it present the least roughness. Should it be necessary to leave it in the bladder for any length of time, its internal surface will remain perfectly clean so long as its extremity is kept closed (as it ought to be), and only opened when the bladder is to be relieved from its contents. The perfect smoothness and firm support of its extremity, the mechanism of the screw, and the nice adaptation of its different parts, seem to me to render it a far superior and far preferable instrument to those of Petit and Franco, which may be said to have some resemblance to mine.

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